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THE MARYLAND FARMER:

DEVOTED TO

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BALTIMORE FERTILIZERS.

There are more fertilizers and various manipulated manures manufactured and sold in Baltimore, than at any city or place in the whole country.—The aggregated amount of sales cannot well fall short of three millions of dollars per annum. This makes a very important item in the trade of our fast growing city. Several millions of dollars are invested in this trade, in which are engaged as the largest operators, many of our high-toned gentlemen, who are irreproachable in character, and stand high as men of integrity and worth among our oldest and most notable merchants. Many of them are known far and wide among the farmers and planters throughout the Union. Some have been engaged in the laudable enterprise of manufacturing these various articles of manure for a quarter of a century, and supplying year after year intelligent and observing farmers and planters to their satisfaction and profit, which is evidenced by thousands of certificates, and continuous renewal of orders from some persons for the same article most frequently in increased quantities. These facts are personally known to us in many instances.

The extracts which many rural newspapers publish from a book called "*American Manures, and Farmers' and Planters' Guide*," by James B. Chynoweth and William H. Bruckner—Philadelphia—and which journals deem it their duty to set forth in glowing colors to warn their patrons, and cultivators of the soil in general, against the villainous frauds of the manufacturers of fertilizers, are seriously operating against the interests of those they intend to serve, and by such general, sweeping denunciations, do great wrong to the interest, injury to the business, and grossly libel the fair fame of unoffending, honest and upright citizens who are engaged in these commendable enterprises. It is to correct these wholesale slanders we write this arti-

cle, having the welfare of our farming community more in view than the simple gratification of defending worthy gentlemen from charges of offences of which they are in our esteem incapable.

We do not deny that the buyers are cheated some times, for no matter what the profession, calling or avocation may be in which men embark, there will be some rogues. Many of these fertilizers pass through several middlemen, and do not go direct from the manufactory to the farmer. We do not charge it upon the middlemen that they do it, yet could do it more easily without loss of character or of business. If they adulterated the article, they have but to say we sell it as we received it, and next year do the same thing with some other fertilizer, while the manufacturer is well aware if he sells a spurious, worthless article, he looses his customers, and all his money and labor invested will be sunk, and thus self interest requires him to be honest, if he be not so from moral motives, or fear of the law. And we all know the immemorial saying about small dealers who get articles from middlemen, and not from the first hands—"Boy, water the whiskey, moisten the tobacco, sand the sugar, and you may go to bed."

In the list of names published as prominent depredators on the rural public, we find not more than one or two who manufacture fertilizers in this city, and others who are the largest or among the largest are not deemed worthy of notice in this search after fraud, or for special reasons have been left out of the investigation, yet they also come under the general denunciation of these public censors, and are more or less injured in the uninformed public mind. While there are but few manufactories of these fertilizers within our borders, yet many of the fertilizers named as frauds in the list as published in the rural papers as taken from this one-sided book, are sold by some of the most reliable dealers in these articles in this city, who have them manu-

factured for themselves in Philadelphia, Delaware, and elsewhere, but hold themselves honorable, as well as under the strict Maryland and Virginia laws responsible, that they shall sell no spurious manure. Each bag of which shall contain the various constituents marked on it, as required by the laws of these States. What better guarantee can the purchaser demand?

We have taken pains to ascertain from most of the prominent dealers and manufacturers the actual cost of the constituents of their several fertilizers, and feel satisfied that when the cost of the separate constituents or ingredients, some of them are to be paid for in gold, (one large manufacturer showed us a receipt for \$42,980 90 for Peruvian guano in gold, bought in the month of May,) and then the rents of buildings, cost of preparation, hire of clerks, agents, freights, analyzing, bagging, loss by evaporation, (for instance, in dissolving the bones by the acid,) the insurance, taxes, drayage, and profit and loss, but a small profit is made on a single ton. It is true, and it is right it should be so, those who have a good article make a fortune in a series of years because of the *quantity* sold.—Taking in view all the above charges and expenses, if a fertilizer costs the manufacturer in the raw materials, \$35, and he sells it at \$50, is that a fraudulent overcharge to the purchaser? Is his profit any greater than that of the sugar refiner, as one instance, to show the difference in price between that the consumer has to pay, and what the crude article sold for at the sugar house of the planter in Cuba. We might just as well make war on the sugar refiners because their prices are so much above the cost to them of the crude articles, which they employ in giving us a pure, clean article. The book itself is a fraud on the farmers and planters. Acting upon the opposite motive in the policy, that Herod of old pursued, they desire to kill all the children that the one child of their conception should have no peer in the land. The motive is too apparent—it sticks out a “feet,” as the boy said.

In many of the analyses given, Mr. Bruckner differs from analytical chemists of much greater note than himself, and may therefore be reasonably doubted. He admits that in *one* instance he was mistaken, or rather, says an improvement has been made to the extent of an addition of one-third more of ammonia, and one and a half more of soluble phosphoric acid, yet the manufacturer sells the same manure at less cost than when it had that amount of costly ingredients less. He, or the first named of the authors of this book, Mr. Chynoweth, (is that an alias? it seems to us he was known in Baugh's manufactory by another name, but we *may* be mistaken,) therefore strongly recommends this manure because the manufacturer of it has turned honest.—

Well, it is true we are required to rejoice over a repentant sinner!

It is not so much the loss to individuals, if this great trade languishes under these slanderous reports, as it is that an important source of the general commerce and tributary to the prosperity of the city is ruined. In this way, any one of the branches of business might be ruthlessly attacked and broken up, if it were not defended. Take the oyster and fruit canning and packing for instance, one of the big features in Baltimore trade, and that great business could easily be broken up and become lost to the resources of the city, if rival adventurers somewhere else raised the cry that Baltimore fruits and oysters were a fraud, and dangerous to the health of the consumer, and every “Tray, Blanch and Sweetheart, little dogs and all,” over the land joined in that “hue and cry.” So that this is an attempted blow at not the fertilizer manufacturers alone, but at a great branch of Baltimore trade which has materially aided, and is daily increasing in its influences, the prosperity of the city. So that under pretended love of the farmer, an individual rival enterprise is to be built up at the expense of Baltimore city. It is futile, and will of course prove a failure, yet this daring game will have an effect more or less upon the credulous and too easily persuaded tiller of the soil, and hence it is a matter in which all mercantile men of Baltimore are interested, and therefore it becomes us to denounce this insidious slur on the character of our merchants for honesty and honor. Their escutcheon it too bright to be soiled by scum. We felt it a duty to our farming friends, as well as to those manufacturers we know personally, to write what we have written, believing with a great writer that while “Truth is violated by falsehood, it may be equally outraged by Silence.”

As enlisted champions of agriculture, and doing daily service as sentinels on the bulwarks of her citadel, we zealously watch over the interests and safety of the garrison, and will not permit an enemy under the white flag of friendship to approach with the view of cutting off the chief source of supply, without firing the alarm gun. Fertilizers are the great helper to the American tiller of the soil, and in a measure supplies the present want of labor. Without the improved machinery and *ferti'izers* what would be the condition of agriculture now? Therefore, we feel bound as the guardians of the interest of the agriculturists to meet boldly and defiantly this attempt to break down the manufacturers of all fertilizers, unless it be, forsooth, some special one in Philadelphia, by inducing the land workers to believe that *all* others are gross cheats and frauds.

Our readers are too intelligent to suppose we are denying that gross frauds have been practiced, and

that humbugs have been started, by irresponsible men like the authors of this book, which have mushroom-like lived and died in their short day. We simply, in the interest of the farmers and planters, our patrons, are defending the principal dealers and manufacturers of fertilizers against these insidious, self-interested attacks, calculated to prevent the use of these valuable aids to the improvement of the land, and the increased products. In this we make no "new departure" from our long settled, and oft-proclaimed views. We have always advised our readers to buy only such manures as contained the most bones and lime, except for particular crops or localities, when they might purchase other fertilizers less rich in those elements, for trial, and if found to suit their wants, then to continue using the same until something better was substituted.—These have been our almost monthly admonitions and counsel. We have no axe to grind, except the great broad axe of agriculture, which we look to the farmers and planters alone to help us to grind, and keep sharp and bright.

It is a pity that Professor Bruckner should have marred his book with its last chapter, in which there are such sweeping denunciations against, nearly, if not all, (many are named,) of the manufacturers of fertilizers, and feebly attempting by very poor wit to bring into contempt the honest expressions of approbation of a particular manure, by such gentlemen and highly esteemed men as Judge Oldfield, A. T. C. Dodge, Dr. Howland, and several others. Such slang is unworthy the dignity of a scientist, and discreditable to the heart qualities of one who professes so much philanthropy for his deluded countrymen. The greater portion of the matter of this book is useful to the farmer, and will some day, (when purged of these excrescences,) be esteemed as a valuable contribution to American agricultural erudition and practical science. The subject of fertilizers is important and highly interesting, and we shall have more to say soon in regard to the matter. It cannot be too freely ventilated. The standard of all first-class fertilizers has been raised, and the demand has correspondingly increased, until the business has assumed gigantic proportions.

NOTE.—The proof-sheet of the above article was hardly dry when we received the flaring advertisement of Mr. Bruckner, which will be seen in our advertising column. It makes us the more satisfied with what we have written, and feel sure we are doing the cultivators of the soil a good turn in warning them against abandoning the purchase of established fertilizers which have given satisfaction heretofore, by being deterred by this new claimant, which is to be heralded by sweeping denunciations, against all others, like the show-bills of quack med-

icines. This book will have the effect of setting the farmers to thinking on the subject of fertilizers, and the motives of those who so vociferously cry aloud, "Stop, thief!" and the result will be, we predict, an increased sale of those fertilizers which are sold in Baltimore, by all responsible and well known dealers in these articles—especially protected, as the purchasers now are, by the laws of this State.

RECENT FRENCH DISCOVERIES IN HORTICULTURE, &c.

A correspondent sends us the following translation from "*La Bein Public*" of Dijon in Burgundy, of the 21st of April:

"An agriculturist has discovered, it is said, the means of preserving the grape vine from their most dangerous enemy the Phylloxera, a sort of vine freter or vine grub. It seems by mixing soot with the earth around the roots of the vine, the insect is paralyzed and is killed.

Secondly, a discovery curious enough has been made recently.

An agriculturist has observed that by watering vegetables and fruit-trees with a solution of sulphate of iron, the most astonishing results are obtained.

Beans have gained 60 per cent. on their ordinary size, and what is better, their taste is much more savourous. Among fruit-trees, the pear-tree is the one that is most benefitted by that process of watering.

Third, the *Revue d'Economie Rurale* announces that a new process of early vegetation has been tried with the greatest success by a horticulturist of Chatillon, (France,) who, besides the heating of the interior air in the green-house (hot-house) heat also the earth itself, the hot-bed on which the plants grow.

For this, he establishes at a certain depth, pipes through which steam circulates constantly. The steam penetrates the interior of the earth by means of valves opening from place to place.

Such pipes are from 5 to 10 centimetres (from 2 to 4 inches) depth by the side of the plant-beds of strawberries, flowers and "graminees;" from 15 to 20 centimetres, (about 6 to 8 inches) for fruit-trees.

The earth thus artificially heated produces vegetables and fruit with an economy of half the time necessary when the interior of the green-house only is heated.

Thus, everyone could see at this agriculturist's, early in April, strawberries that had blossomed, formed their fruits and ripened in 15 days; violets that had developed their flowers in 10 days; asparagus and artichokes which have grown and been gathered in 35 days.

Finally, within only 45 days, dwarf-cherry-trees have budded, blossomed, and brought forth fruits in a perfect state of ripeness.

This wonderful process of early vegetation is new as to its application to gardening. But it is taken from nature. It is well known that in several thermal stations, and especially at Ax in France, the gardens which are near or above the thermal fountains, produce early fruits and vegetables (primeurs) in winter; the earth being heated by water-steam, the heat of which raises to 80° centigrade."

Our Agricultural Calendar.

FARM WORK FOR JULY.

The fiery July with his passionate outbreaks in thundering storms, is upon us. Let us be prepared by early rising, increased energy and watchfulness to prevent harm from his intemperate moods. Before the midday heat accomplish all you can, take a long, refreshing rest while old Sol is burning hot, and again work hard as evening indicates his retirement. Take your rest about noon and midnight, it will be better for farmer and farming beasts. In a word, work early and work late. You have your harvest to finish, your grass to secure, your corn, tobacco, and root crops to keep clean and growing by working as often as is necessary, and your stock requires much of your attention, so that you have but little time to play the gentleman of leisure in going to pic-nics, Fourth of July's, political meetings or under pretext of fishing, sleeping on a green grass slope, under an umbrageous beech or oak, with the waters of the brook gurgling a lullaby to your lazy repose, nor is there time for you to sit by the hour kicking your heels against the counter of your post-office store under the plea that you are waiting for a tardy mail, to be brought by a poor horse overladen with a mail bag that is itself overcharged with most trashy matter.

Besides the many small matters which your practiced eyes will discover should and must be done this month, we will remind you of the following chiefly important matters:

Harvest.

Finish securing the rye and wheat crops, and then the hay, oat and barley harvests. As the season has been so unfavorable the latter will, we fear, be late and light, therefore the greater necessity to save each in the most careful and nicest manner to prevent loss, for there is no margin for waste. As soon as the crops are cut, glean closely with the horse or sulky rake, and get all in shocks or under cover as quickly as possible, before rain if it can be done. Thresh your grain as early as you can, you will then be at any time in a position to take advantage of a rise in the market. In the fluctuations of prices, the highest prices rarely are kept up long enough for you, after you get the news, to thresh, clean and get your crops in market. Those who put off the preparation of the crop until "it goes up," will generally find themselves "gone up" as far as the price has "gone down,"—like the foolish virgins they will have no oil in their lamps and the market doors will be closed.

Straw.

Save your straw and keep it if possible under cover, if not, put in large ricks, carried up high

and in shape of a house with sharp roof. Tramp down close, rake the sides close and perpendicular with the top sharp. Next autumn and winter pack it and you will realize a high price for it. At the moment we write it is in demand in this city at \$20 to \$25 per ton, and timothy hay at \$40, with a demand greater than the supply.

Corn Broadcast.

As the spring was late and cold, and then dry with hot suns, the hay crop in most parts of the country on the Atlantic slope of the Middle States will be a poor one, almost a failure, we advise that a few acres of well manured land be put in a nice state of cultivation, and 3 to 4 bushels of corn per acre be sown broadcast for soiling in September or for fodder next winter.

Corn.

If this crop or any part of it has not been "laid by," it must be well and thoroughly worked with either deep sharp cultivators or shovel plows, and as soon as it is about to show the tassel stop working, and unless you please to put the land in again this fall or spring, sow one peck of clover seed and one gallon of timothy seed per acre at the last working, either before or directly following the same.—The better plan would be to put in the seeds by a small toothed harrow or cultivators with straight wooden teeth, the cultivator expanded to the width of the row, and go across the last working if the corn be planted in checks. Then if a rain or moist weather comes in a few days, you will be sure to have a good stand of clover.

Turnips.

If you mean to put your corn ground in oats and clover next spring, you will not do wrong to sow white turnip seed mixed in ashes or plaster at the rate of one pound of seed and a peck of plaster per acre just before the cultivators or shovels when going over the last time. You will in all probability get a crop of turnips which will, with the fodder on the land covered with turnips, fatten five mutton, giving a nett profit of \$15 per acre, and that depasturing increasing a third the coming crop of oats and insuring a fine stand of clover. If you have not sheep, save the turnips and convert them into butter, which will require more labor but will pay much more profit. Turnip culture pays.

Salt.

Salt is the "savor of life," and you cannot well make too much use of it. Use it freely with straw and hay when putting it in bins, stocks or ricks for winter consumption. Of course an excess might be hurtful, but such intemperance is not likely to occur.

Tobacco.

You need hardly be told to embrace every chance to finish planting, if you have not already done so,

Work it well, keep worms away by the only process—catching and killing. We could hardly say, but have a strong notion this is to be a great tobacco year.

Hogs.

Hogs require sulphur, which is best administered to them in charcoal, soft coal, rotten wood, or the green wild or domestic mustard. A contemporary says they devour the stem, leaf, blossom and seed of mustard, especially when they are penned or confined to a small lot. As a means for preserving health, or as a pleasant condiment, instinct leads the hog to seek sulphur in different bodies, but especially in the wild mustard, as they do salt, which they will eat to excess and be killed thereby if they are not accustomed to it, but when they have, from pigship, had free access to it, they never overdose themselves.

Cattle, Horses and Sheep.

Stock of all kinds, sorts and ages require much attention this month. See that you provide them with plenty of cool, clean water, and ample shade, because this is the period of the year when insects are the most active and harassing to the animal creation, which seems more oppressed and languishing under the heat. Now the fly is active in depositing the worm on the nostrils of the sheep, and the bot-bee laying its eggs on the legs of horses, to be carried into the stomach and soon become bots, for the continuous annoyance of the horse until death ensues. Have then your horses' legs rubbed daily so as to be kept clean of the eggs containing the embryo flies or grubs; and see that your sheep are frequently given salt in a freshly tarred trough. We mean by tar, turpentine tar. Salt your stock often, for every attention should be given them, anticipating, as we must, towards the close of the month, the failing of pastures and grasses, vegetation showing the effects of the weather at this season most decidedly.

"Deep to the root
Of vegetation parch'd, the cleaving fields
And slippery lawn an arid hue disclose;
Echo no more returns the cheerful sound
Of sharp'ning sythe; the mower, sinking, heaps
O'er him the humid hay, with flowers perfum'd."

SUMMER CARE OF HOGS.—A practical breeder says: To handle hogs to the best advantage, a pasture is needed of mixed grasses—clover, blue grass, and timothy—and it is best if there is no running water or stock ponds in the lot. Hogs do better where there are no branches or stock ponds to wallow in. In place thereof, have good well water pumped for them. Have troughs made, and nail strips across, eight inches apart, to keep the hogs from lying down in the water, and let those hogs be put on floors to keep them from digging up wallowing holes. If any feed be given, it should be soaked in swill barrels for twelve hours before feeding—no longer—and feed to them as drink.

Garden Work for July.

The month of July is an important month for the gardener, yet it is the very month when generally in the country it is most neglected. The weeds and grass are suffered to grow, and less attention to the growing plants is given. Most of them are in bearing, or near maturity, and such is the abundance of both fruits and vegetables, people grow careless, forgetful that now is the time to destroy weeds, and secure a rich supply of vegetable food for autumn and winter, when there will be a scarcity otherwise.

Beet.—An ounce of the seed of this very popular vegetable sown now in rich, deeply shaded ground, will be tender and large for winter use. Sow the large long blood red beet. It will be nice on the table as a variety, and serve for excellent pickles by simply pouring over the slices spiced vinegar, with salt to the taste. Too little attention is paid to its cultivation. It is a handsome and desirable dish at all times on the table, and in winter particularly so, when planted this time of the year and properly managed, so as to have the roots large and free from strings and toughness. Here, let it be remarked, that much depends on the culture of any vegetable whether it be profitable or not.

Bush Beans.—Sow a few rows of bush beans for a succession, and for pickling.

Cucumbers.—Early this month sow seeds of cucumbers for family use or for market. They will well repay the cost of work. Put a dozen seeds in each hill, the hills three feet apart. Each hill made large, and prepared with well rotted stable manure or sheep manure, intermixed with the soil. They sell in market at a good price, if they are not too large, and those not sold, or if too far from market to dispose of them, place in clean barrels in rows or layers like fish, and sprinkle salt between the layers, they will keep firm and nice until you can obtain a remunerative price for them in the markets the coming winter or next spring. Be sure and pull them before they get too large; from 2 to 4 inches is the proper length to gather them.

Endive.—Plants may now be set out, and more seed sown for a succession. This is an excellent salad, highly esteemed by many persons. It requires to be quickly matured and well blanched, which renders it crisp and less bitter to the taste. It is dressed as lettuce.

Celery Plants.—For principal crop set out your celery plants on deep spaded and rich beds, in rows 4 feet, and the plants 6 inches apart. Water well, and spade until they are well rooted. This mode is now generally pursued, while others prefer the old plan of trenches, the bottom of these highly ma-

nured and intermixed with the soil finely chopt.—This is a healthy and very popular vegetable, fit for the table of an Emperor, and should be more generally cultivated.

Roasting-Ear Corn.—Plant now for autumn roasting ears. Those near market, and those who live adjacent to water communication or railroad, would do well to plant a few acres in corn for late use, as green corn brings a better price in the fall than in summer. Many who fear to eat it in the heat of summer, enjoy it in autumn. Much of the late corn is canned or dried in the autumn for winter and spring use. The best kinds for planting now are Evergreen Sugar, Large Eight-rowed Sugar, Sandford, Large White Dent. Plant all close as usual, with early garden corn, except the Dent, which must be 4 or 5 feet each way, two or three stalks in the hill.

Radishes.—Sow seeds of the turnip-rooted sorts occasionally.

Leeks.—Set out leeks in good ground, and keep them free from grass and weeds.

Pot and Medicinal Herbs.—Slips of the various sorts of herbs may now be set in a well prepared bed, shaded and moist, rather than dry. Do not water them too freely, but let the ground not get too dry, and shade them from the fierce rays of the sun, and expose them to the night dews, as also the morning and evening sun. They will soon strike roots, and become strong and well rooted plants to be set out in October in the spots where they are to grow.

Keep the borders and beds clean, and the ground loose; the walks closely shaven; destroy all the bugs, worms and insects you can; cut the runners as often as they appear on your strawberry vines, and let no grass grow in the beds—pinch the rampant shoots on your grapevines, and thin the fruit as it increases in size; look well to your melon vines; gather onions and the different seeds as they ripen. Do these things, and all others that your judgment will dictate, and you will find the gardener has his hands full, and can afford to eat no idle bread during July.

TOP-DRESSING GRASS.—Prof. Beal, of the Michigan Agricultural College, gives the following results of top-dressing grass land, performed some years ago at that college. Such experiments are worth repeating, and will doubtless give varying amounts of increase, with soils, seasons and other influences. Soil sandy loam, not in a high state of cultivation, nor very strong land :

2 bushels plaster to the acre caused a gain of	
hay of,.....	64 per cent.
5 bushels ashes,.....	53 "
20 loads fine muck,.....	51 "
20 loads fine muck, 2 to 3 bushels salt,.....	81 "
3 bushels salt,.....	90 "
20 loads horse manure,.....	117 "
20 loads cow manure,.....	97 "

FAST TROTTING.

It is astonishing to what a degree of speed in this gait, to which the trotting horse has been educated in this country. Owing to greater judgment in the breeding; to improved tracks, and a more natural and skillful manner of training, the race horse has within a few years past increased wonderfully in speed, size, and possibly, in endurance or lasting qualities, but the trotting horse has far excelled his compeer racer, in proportionally cutting down time in getting over like distances. We always take pleasure in the record of the breeders of neat cattle, which shows their triumphs in piling on flesh in the shortest time and most economically, and in increasing the quantity of milk or butter, and we feel called on to do like justice to the skill and science which develops the power of the horse, as shown in the following paragraph from the *New York Herald* of the 25th of April :

"Mr. Bonner drove his celebrated colt, Startle, yesterday afternoon, on Fleetwood Park, a quarter of a mile in thirty-three seconds, to his road wagon, in the presence of a large number of gentlemen.—The colt was timed by Messrs. Daniel Pfifer, John Lovett, and several others. No horse of any age has ever trotted, when hitched to a road wagon, a quarter of a mile as fast as this, except Dexter, and he made it in exactly the same time. A few days ago Startle trotted a half mile to a road wagon at the same park, on a heavy track, in 1:09 $\frac{3}{4}$. Such veteran horsemen as Pellman, Pfifer, Saunders, Roden and Lovett, pronounce Startle the most extraordinary trotter that has ever been known. Mr. Bonner paid \$20,000 for him a little over a year ago, but Mr. Alley, from whom he bought him, has since then offered \$35,000 to get him back again."

This is a wonderful performance, made at an unfavorable time, in a very backward season, which necessarily has prevented proper work by a horse not then five years old. He has been pronounced by the best judges to be a finer horse than grand old Dexter. Such facts give great encouragement to breeders of trotting and other horses. In addition to the above we find from the *Turf, Field and Farm*, that Mr. Bonner has purchased for \$5,000 the foal, dead or alive, which is soon expected to be dropped from the dam of *Startle*, thus truly "buying a pig in a bag" at a tremendous price — If it should prove to be equal or better than *Startle*, it should be named "*Lucky Venture*."

KINDS OF EVERGREENS.—The evergreen for yards is the American arborvitae or hemlock; for lawns the Norway spruce and hemlock. Be careful to select well-branched from the ground up, with a single main stem. Plant carefully, stake firmly, keep the grass, weeds, dogs and chickens away, and you will have fine specimens.

FARMERS make good roads by ditching and grading. It pays two-fold. The adjoining lands are drained, and the roads made passable during the worst portions of the year.

For the Maryland Farmer.

EDITORS, TURNIPS, RAPE AND OTHER THINGS.

Dear Farmer :—The reading of your instructive pages always moves me to have a say on one or more of the many topics you bring monthly to our notice. It is necessary to restrain the impulse for your sake, but being in a talking mood just now, let me have the satisfaction of saying among other things, how well pleased I am at the "new departure" of the *Farmer*, with our old Patuxent Planter helping to drive the team. You could have done no wiser thing than bringing to your help one so well known as at once an experienced and ready writer, and an observing, intelligent farmer.

There are agricultural editors throughout the land, plenty as blackberries, who are skillful enough too in gathering up interesting and useful matter from various quarters. They tell us honestly enough what they know about farming, but very often they do not know much—that is, not really and truly of their own knowledge, but only at second hand.—Hence, in their gatherings they fail sometimes to discriminate between sense and nonsense, and get caught just as the Colonel catches "our venerable contemporary" in that little matter of keeping fat during four months eleven head of cattle on an acre of millet, sown in drills three and a half feet apart! It is quite impossible that any one who had ever grown an acre of millet, or seen it grow, could have been betrayed into such a statement. It is truly, as you say, "such statements that render 'book farming' ridiculous in the eyes of sensible, practical men."

Ruta Baga Turnips.

In your Farm Notes you say of this crop, "First of June sow in drills two feet apart, work often, and keep clean, &c." This time of sowing is so much earlier than is usually practiced in this country, that I am prompted to ask, for information, the ground of the suggestion.* One argument in favor of this, over other root crops is, that it may be sown with the best results, as has been supposed, after the busy harvest season. Without any experience of the early seeding, I have taken the impression that so long a season of growth would make the root woody, and that to get a good and succulent crop, and at the same time a full one, it would be sufficient to have it well established by the first of August. I am quite open to conviction, however, as to the advantage of earlier sowing.—The drought of midsummer is always a serious drawback to the setting of the crop, and to quick growth in its early stages, and this gives great opportunity to the fly, its greatest foe. The first grower of the ruta бага in this country was, perhaps, the famous William Cobbett, when he farmed on Long Island, and the most complete essay on its

cultivation I have seen was written by him and published in the very first number of Skinner's *American Farmer*. He recommended, I think, the early sowing, as has always been practiced in England, but his method was to sow in beds and transplant as we do our cabbages. It is well known that they grow as rapidly this way as cabbage plants, and I propose to give their method a trial this season. It would seem to offer the advantage of a more sure and regular setting of the crop, for the difficulty of getting the seed up regularly in July, and the ravages of the fly are great hindrances to the later seeding; while the thinning and extra working would be a fair offset, perhaps, to the labor of transplanting.

Rape and Sheep.

Sheep growing for mutton and wool must become without question a very important interest on our unimproved lands especially. There is nothing so capable as the sheep of gathering up fragments that nothing be lost, whether of wild garlic, briars, or what not, and nothing makes better return for a moderate investment and small amount of labor and food. Only we must not leave our sheep entirely to themselves on poor pasture. We must supplement what they can gather there with something that will ensure good lambs and good mutton. It is only on good mutton that the public taste will be cultivated up to a universal consumption, and make the demand for it we want. Sufficient provision therefore must be made for extra feeding. It may be with bran or meal or both, which will help largely to manure the poor pasture, while the close browsing destroys briars and other growth; or it may be a rich grass lot where they may be turned for a few hours every evening before going to rest.

As a supplemental sheep pasture for winter and early spring use, rye sown at the last working of corn will be found very useful. It has the advantage of being a familiar friend well known to our poorer lands, and may, after serving a winter and early spring grazing, say to 1st of April, be worth quite as much perhaps as a crop of oats on the same ground. On a tobacco lot of medium quality and well manured, I saw last year at harvest as handsome a crop as I have ever seen, that was grazed as closely as possible to the tenth of April.

It is the Rape, however, or Coleseed, that I wish to call attention to again on the suggestion in your May number, based on the trial of it given by Mr. Harris as winter food for sheep. That he could use it successfully in this way so far north as Rochester, is surely very encouraging to us in this milder latitude, where our sheep may be out-doors in all but the worst winter weather. Indeed there is no reason to doubt its successful cultivation, wherever other plants of the cabbage tribe grow. It has,

too, for us who know the value and cheapness of plaster, the good quality of being very susceptible to its action, while it may be made also a most efficient green fertilizer. It is worth indeed a fair trial, and it is to be hoped Mr. Whitman will hunt up some of the seed in time for a trial in July, and ascertain how much to the acre, for I do not know.

Mr. Cuthbert Johnston, in his *Encyclopædia of Agriculture*, describes rape as a plant of the cole kind, greatly cultivated in Flanders for the sake of the seed, but extremely valuable also as green food for cattle and sheep in winter and spring. There are different modes of treating this plant, according to the uses for which it is designed. The whole plant is of great service in feeding cattle; and after the seed is threshed, the straw and chaff on being burnt afford ashes equally valuable as the best pot-ashes. Wheat yields an excellent crop after rape. Rape is very hardy, and with fair treatment it never fails on any soil. Cattle are so successfully fattened with it that many farmers prefer it to turnips.

Mr. Bleckie, in his *Essay on the Improvement of Small Farms*, says that the produce of the rape when *well manured*, is beyond anything almost that can be imagined, if let stand until it gets into blossom. Manure, he adds, makes the stalk tender and juicy, which would otherwise be hard and dry, so that if cut into small pieces for the purpose of feeding green to cattle, not a bit will be lost, and it grows to a height of six feet. I am, he says, almost afraid to say, that I believe, with the addition of some straw, an acre will keep thirty head of cattle in full milk for a month.

It is proper to add, that there are two varieties sown in England and France, one an annual sown in spring, and the other biennial sown in mid-summer. It is cultivated in both these countries for the value of the oil pressed from the seed, and for the cake left after pressing, which is extensively used as food for fattening cattle.

MARYLANDER.

Comments on the Above by the Editor.

*We did not mean to be understood to say it was the best time to sow ruta бага; we only meant that it was not too early, and intended at the time to say, (but overlooked it,) that last year it was found to have been the best and only time, in a large section of the country. For, the drought was so great, the seed did not come up. There are many experienced root growers who now advocate early, *very early*, sowing for all roots, and contend that even potatoes should be planted in May for winter use. It has ever been the practice in this State to sow ruta бага for stock feeding, between the 15th and 25th of June, and we concluded from last year's experience that a fortnight sooner would not materially affect the hardness of the root. We are aware

of the objection to too long a time being given for the growth of roots. For the table, the shorter time in which all roots can be brought to maturity the tenderer and more succulent they will be—but for stock, it does not make such a difference as to run any risk of the seed not vegetating by delaying to the last moment to put it in the ground.

We know practically nothing of Rape, but *Loudon* tells us it may be sown later than turnips, in drills, and cultivated as turnips are, or if on well prepared land may be sown broadcast. It does not require the land to be so rich. It is best to be fed by sheep on the land. It is fine food for all stock. It may be sown in beds and transplanted, which is the best way when cultivated for its seeds, it being an oil plant, and a valuable one for that purpose. After the oil is expressed, the refuse husks is rape-cake, which being ground makes the famous "rape dust," so valued by gardeners in England for growing garden vegetables. As to the quantity of seed, we suppose the same quantity in weight as turnip seed, or a little more, the seed being larger and lighter in proportion to bulk. We think from 5 to 6 lbs. per acre would be sufficient—the plants should stand several inches apart; in drills, the books say, 8 inches by 2 feet. Messrs. E. Whitman & Sons have a supply of seed on hand at a reasonable price.

EARLY POTATOES.

E. B., a correspondent in the *Germantown Telegraph*, writing from Burlington county, N. J., says:

With us raw ground is almost invariably used in raising a crop of early potatoes; that is to say, ground from which a crop of corn has been grown the previous summer. The corn-stubs should be cut in the fall close to the ground, giving an extra hack to the roots; plow the ground, but do not barrow it. The manure intended to be used can be spread at any favorable opportunity during the winter, the earlier the better. Any coarse, long manure is better than fine, well-decomposed compost. Marl is mostly used here in the hill, quantity about a pint to the hill. I prefer to spread it on the ground at the rate of six tons to the acre. One pint to the hill will use up about five tons to the acre.

If the ground in the spring should be very rough, harrow it well and plow across the previous plowing; and when harrowed well should be marked out the proper distance, and the potatoes planted. Cover with a plow. As spring advances, and all danger from serious freezing is over, put a piece of scantling under your barrow, and run it over the rows, *scraping about half of the earth away from above the potato*. This process destroys all weeds that may have started, and at the same time leaving a fresh surface just above the potato to the action of the air and sun. In a few days it will be found that the potatoes are breaking ground all over the patch. The after culture consists in keeping the ground mellow and clean. If this is done the result will be a good yield of fine large potatoes.

TO YOUNG FARMERS.—No. VII.

Observe—Read—Think—Study.

There is no other class of business men who have so much need to notice and examine everything in Nature, coming within their reach, as farmers; and there is no other whose regular business embraces so much to notice and investigate, in his field of operation, as the true agriculturist—none surrounded with such dignity and wonder. He has all the elements—earth, air, water and life—for his dominion; they are at work with and for him; the sun, rain and atmosphere operate on the soil and seed to effect germination, growth and ripening of vegetation, that fruit and grain may be produced for the support and delight of the cultivator. And in this grand and beautiful scheme man is the chief director and operator—the engineer.

And it is not alone the *quality* of seed and soil that determines the quantity and quality of product, but the *conditions* and *adaptability* have much to do in the production of desirable results—good yields. To secure this, observation, experiment and thought are requisite. It is the province of the good farmer to carefully study the nature and requirements of vegetables and animals, and watch the results of operation, that he may be able to prepare, modify and secure these conditions so as to produce, to the fullest possible extent, the most desired results in all his work.

In order to do this effectively, he needs to *notice* and *compare* all the facts and signs connected therewith—to use his reasoning powers in regard to the development of nature; and find out the cause of phenomenon, or their obstruction. He can think and study as he follows the plow, or swings the scythe, or plies the hoe; he can cherish and keep a lively spirit of enquiry, and keep an active eye open to notice everything, letting nothing escape his observation and thought, that in the least affects his business. In this way he will enjoy a perpetual feast of curiosity and delight; and just in proportion as he indulges and enlarges this mental exercise will he rise above the team that draws his plow and obeys his word.

In addition to *reading* the current news and reports of experiments and results, performed by others, which may be profitable lessons to him, the wise and intelligent farmer, in his leisure and resting hours, will also study works on science—such as *geology*, which informs him of the structure of the ground he tills, of the rocks and minerals which compose it, their effects upon the quality of soils—how different soils are made by the decay, disintegration of different rocks, and how to judge of the value of soils by the rocks under and around them, even without seeing the growing vegetation; and

be able, by seeing the rocks, to judge for what the soil is best adapted. Studying the science of *chemistry*, too, is highly useful and delightful—teaching the quality and constituents of soils, without seeing where they were formed; as well as how to make them what you wish them to be.

Botany, also, is a science of wide and important interest to the young farmer, and one which he cannot neglect without disadvantage and decrease of profit and enjoyment; it beautifully points out the nature and wants of plants; teaches to distinguish between useful and hurtful plants, by showing the nature, peculiarities and habits, it enables the grower to improve and diversify his grains, fruits and flowers to an almost endless extent; and thus provides a feast of highest enjoyment for the mind of the intelligent farmer. So with many other sciences—in fact, there are very few branches of useful knowledge that will not yield both profit and pleasure to the studious farmer in a high degree; and render him the most respectable as well as delightful profession pursued by man; and when properly appreciated and fully understood, we shall see very few of our most talented young people seeking homes in cities and towns, in hopes of greater attraction or distinction. Mere reading is not study—we read novels and stories and pass them by; we read history and science, and curiosity is awakened; we read again, and become speculative and thoughtful about mysterious nature; we read yet again, and begin to know and marvel; grand, beautiful nature presents an endless and charming feast of pleasure and treasure, of which we never become cloyed, never sickened by over feasting, and whose rewards of wealth are as beautiful as her feasts of reason, if we continue constant, loyal and industrious in our devotion to her.

Hence, if reading of books and papers—"book farming," so much derided and ignored by too many—did nothing but set young farmers to observing facts and events occurring all around them, and to thinking upon them, *that* alone would be of inestimable value; and if my communications shall effect nothing more than leading young readers to think and study, I shall be greatly gratified. It is hardly to be expected that the older class, who have long been established in their "accustomed ways," will be readily induced to change and adopt improved modes—but not so with younger operators; they will naturally seek intelligence and the better modes, to be obtained through reading, thinking and study—both for its greater profit as well as for higher dignity and enjoyment. This is the way to make farm-homes and farm-life more attractive and influential than the town or city customs, and less corrupting.

It is not enough that seed and soil should be brought together to produce the best yields of product; a hap-hazard or ordinary planting will produce a crop; but to secure the best results, both seed and soil must be of the best quality of their kind, and of the best adaptability to each other—with proper conditions of moisture, fertility and light—suited to the seed and its growth.

Every field of grain, every orchard, and every herd or flock, will show some specimens that are better and more thrifty than the majority—rare specimens that excel all the others, while the circumstances *seem* to be equally favorable to all alike; then there must be a cause for superiority.

LAND MARK.

For the Maryland Farmer.

PATRONS OF HUSBANDRY.

Frequently I meet farmers who have examined the character and objects of the Order of "Patrons of Husbandry," who readily admit the necessity of such an Order, and approve it generally, but they object to the *secret* feature of it; when, in fact, that is one of its greatest elements of strength for good, as the following considerations, in my opinion, will show.

The designers of the Order, and those who have belonged to, and labored with it for years, have realized the indispensable necessity of that portion, and found the stability and efficacy which it confers. It is a bond of fidelity and devotion, which gives strength and reliance, enabling all to at once know who are friends, and prevent the enemies and impostors from entering the councils of farmers, to work their injury. There is no secrecy in the work that is wrong, or works injury to any honorable class of business; there is no secrecy except in the initiation, and means of recognition; the manual, of ceremonies, is open for public inspection, and may be read by any one who desires to do so.

Those organizations, which for ages have had this feature of fraternity, have enjoyed permanence and harmony. All business firms, all great commercial associations, have their private marks and secret cyphers, known only to the initiated; church conclaves, families, and literary societies have their secrets, useful to them, and not known to others. The Congress has its secret session; no wrong necessarily exists on account of this secret arrangement, unless wrong be designed and committed; and evil disposed men will do wrong out of such a condition as soon as in it, but it is one great means to keep bad men out of the farmers' councils.

The brokers, speculators and sharpers, who are every where combined to the disadvantage of farmers—all the "rings" and monopolies who are banded

together to operate in farm produce, from one end of the country to the other, have their secret cyphers and signs by which they understand each other, and can communicate in regard to markets and crops, which none but their leagues understand.—From Omaha to St. Louis, Chicago, Buffalo and New York, these operators are a secret clique, making larger profits by simply handling the products of honest, hard toil, than the producers make after a year's hard labor; and the PATRONS have found, by happy experience, that they are enabled much more readily to protect themselves and secure their rights, in this fraternal organization, than they ever could before; and that too without working any injustice to any one; they have proved its power and efficacy, and therefore they believe in it, and know it to be a good institution; but they do not confine the benefits to themselves; they help all, indirectly, and wish success to all classes and societies of farmers; but it is equally true, that those initiated into, and faithfully working with, the Order, realize, necessarily, greater benefits and broader advantages than outsiders can. They wish all Agricultural Associations to flourish, and have no opposition to or complaint against any; but offer to all who are honest and reputable, the privilege, and invite them cordially to join on the same terms, as we have all done, and to have the same advantages we all have. By this secret association men are tried, and good men received and bad ones kept out, which cannot well be done in the case of entirely open societies. But I do not wish to constrain or force the belief and concession of conscientious men who think differently, and will even wish them equal success for honest industry and production in their own way. Secret initiation and recognition has always been an element of permanence, fidelity and confidence in associations of men in all ages, and is only wrong when diverted to wrong purposes; and there is no power possessed by man that may not be badly used; yet, that is not a valid argument why man should not possess power and freedom. It cannot become political—it is constitutionally prohibited—even to discuss party.

D. S. CURTISS.

CARBOLIC ACID AS A DISINFECTANT.—C. Hom-
burgh, of Berlin, proposes to use carbolic acid as a disinfectant, by saturating sheets of Bristol-board, or any thick spongy paper, with a solution of carbolic acid in water. The paper, in pieces of any convenient size, may be hung up in the room to be disinfected, or may be placed in drawers or wardrobes, where it is desired to protect clothing from moths or other insects. This suggests a convenient method of using this excellent disinfectant and insect destroyer.

For the Maryland Farmer.

SEVERITY OF THE PREVAILING DROUGHT: Its Lamentable Consequences, and How They May in a Great Degree be Averted.

The current spring has been nearly a month later than usual throughout this country; hence there is not the usual growth of vegetation on the ground to serve as a protection against the destructive influences of drought, which is more severe and more general than has occurred before, within the recollection of the writer. In many districts, and in the aggregate, over a large portion of our country, the autumnal drought of 1871 was of unusual severity, and it continued throughout the winter to that extent that the usual saturation of the ground at that season by which the streams are swollen, and springs and wells that had become entirely dry are supplied, has not occurred, and the effect on both animal and vegetable life is fearful.

The short crops of last year, especially of hay, followed by the hard, long winter, has, in many instances, resulted in immense loss. There are extensive districts in this country, and some in nearly every State and Territory, in which cattle have died of cold and starvation.

According to the Report of the Agricultural Department, many cattle have died in Maine, notwithstanding the stock was greatly reduced in autumn, and they were housed in winter. The returns from one county of Texas alone, state that not less than fifteen thousand head of cattle have died of cold and starvation. Portions of Arkansas report that the loss from cold and dearth of provender, is greater than it has been for fifteen years.

But the districts reporting the greatest loss are those in which little or no provision is made for the stock in the way of shelter, or cured provender.—There are, however, regions in which all the cattle are stabled, and everything husbanded in the shape of cattle food, where the loss has been great. The drought was so severe last year that the animals suffered for months for both food and water before they went into winter quarters, and have been kept on short allowance of both to the present time, and as a natural consequence, many have died. Cows surviving such treatment up to the period of parturition, have many of them died, and others cannot feed their calves, so that the sum of the loss cannot yet be estimated. That it will be enormous is already certain, and it will be felt for years.

I have never received a Report from the Agricultural Department that I considered so valuable to those engaged in agriculture, in all its branches, as that just issued for March and April.

A large portion of the whole country has reported the condition of winter grain, grass, and of live stock, and the statistician has so condensed the returns in his report, that every farmer receiving it may, in an evening, make himself familiar with the general condition of this vast country.

I look upon these reports as invaluable to the farmer, if he will read and heed, and direct his future operations accordingly. The loss of lambs and calves will probably be much larger this spring than it has ever been before.

Many counties in the South return a loss of 50 per cent. of the former already, which will greatly affect the price in particular districts, and the effect on the price of sheep and of domestic wool in the clip of 1873, may be anticipated. The error of

overstocking is common in almost every stock-keeping district.

When a general drought occurs, such as was the case last year, the excess of stock cannot be sold at paying prices, but is kept on, and more than can be maintained is carried into the winter, and the evil is daily increasing, until loss by starvation has been in many instances the inevitable result. We would naturally suppose that such experience would not be forgotten, and that no individual would lose twice from the same cause. This, however, is not the case, for some farmers suffer such loss year after year, to a greater or less extent, and so continue, strange as it may seem. The same is true in regard to the effect of deep, thorough tillage.

The fact has long been established that soil thoroughly pulverized to a good depth, will endure extremes of wet and drought both better than that which has only a shallow, imperfectly tilled bed in which to root. Yet careless, shallow tillage is the rule, and thorough, only the exception.

WATER SUPPLY.

It being an important branch of my profession to supply water for all purposes on farms, as well as for ornamental places or country seats, and suburban residences, and wells, springs and streams, hitherto considered perennial, having entirely failed on many places which I have improved, I have recently made the subject one of special study, and have conceived an idea which I desire to communicate to the readers of *The Farmer*, hoping thereby to provide an effective, certain, and yet inexpensive means of collecting and storing water for all ordinary purposes, in rural districts.

I have for many years been a strong advocate of rain-water cisterns, in fact, I have not recommended sinking a well on the many places that I have improved, in the past fifteen years, whilst I have constructed a large number of cisterns during that period.

Within the past three years, I have built on, and otherwise improved, two large farms in this State, on both of which there were several wells, most of which were considered durable, but nearly all of them have now been dry for months, and were it not for the cisterns, which I pleaded for consent to construct, water on both these places would now be hauled from neighboring streams, which are also very low, and growing lower daily.

All the cisterns which I have constructed have been designed to receive the water from the roofs of buildings, which is all right, as far as it goes, but a supply of water, for stock particularly, is frequently needed remote from buildings, and it is for this necessity that I propose to provide.

In so doing, I propose by means, which I shall describe, to collect rainfall from the surface of the ground, depositing it in small ponds constructed in the face of a slope, where it is to be allowed to precipitate its silt, and when this is effected, the pure water is to be decanted into cemented cisterns in the earth, which if properly constructed, may be made to preserve for an indefinite period large quantities of water, secure from the effects of frost and sun, and the quality of the water will be good for all purposes, and if the protection from solar influence is as it should be, the temperature of the water will be as low as that from ordinary wells.

This arrangement for the collection of water may be multiplied on large estates, so that a full supply may be had wherever it is needed.

In districts where the rain fall is principally in about half of the year, and very little during the balance, a want of a supply during the dry season is often a serious loss and inconvenience.

This may be effectually provided against on the plan proposed. These collecting, surface reservoirs may as so serve as ice ponds in cold climates.

The water in these ponds will freeze at a much higher temperature of the atmosphere than that ponded by damming streams, and by allowing the ponds to fill just before a freeze, and turning off the supply, the ice may be obtained in a state of greater purity than is practicable from ponds on streams. Besides as will be obvious when I shall have described the mode of constructing these dams, the ice may be loaded into vehicles with much less labor than from those of ordinary construction on streams.

Ice, which was formerly looked upon as an article of luxury, is of late considered by intelligent people a real necessity, and the demand is greatly increasing.

It is an expensive article of transportation, both on account of its weight, and the expense attending its preservation, both in transit and after it has reached the place of consumption; consequently, it is a matter of moment to provide means by which a crop may be secured in warm latitudes with more certainty than is afforded by the usual methods of damming streams.

A crop of ice may frequently be obtained of suitable thickness from pools, where rain fall is collected, when none could be gotten from a ponded stream, unless the stream is conducted around the pond at the commencement of the freezing season, which I have done in many instances, with great success.

MODE OF CONSTRUCTING PONDS AND WATER FURROWS

I propose to select a central position at or near the base of a field having a slope, which need not necessarily be steep, for the reservoir on the surface. This pond may generally be made by means of repeated plowings with the hill-side plow, and in any ordinary clay or loamy land it will be found sufficiently impervious to water without puddling.

In case the soil is very porous, and clay is conveniently obtainable, it may be desirable to puddle the bottom. The clay should be hauled and dumped at proper distances on the bottom of the pond before the water is turned in. With the first rain it will be softened, when it may be puddled and spread over the bottom and embankment of the pond.—Ordinarily, the pond may be made semicircular, and in that case the embankment forming the dam, which should be simply of earth, will be highest opposite the centre of it, and will gradually diminish in height until it terminates on the surface at each end.

The supply of water is to be obtained by plowing water furrows, turned with the slope, extending them from the pond each way across the field, giving them so gentle a slope that they will not be liable to wash.

Corresponding furrows should also be made to leave the pond by the side of the supply furrows, so that the overflow water may be received into them where they are cut into the natural soil, and not in the artificial earth bank or dam. These last named furrows should have a gentle fall from the pond, and so gentle that they will incline to overflow nearly their entire length,

This will effectually prevent washing, and will irrigate the hill slope below them more effectually than it would be done without them, or in case the water had not been diverted from its natural flow in its escape to ravines and streams. The artificial embankment forming the dam should be so high that water will not flow over it and destroy the work.

The dam should be graded with a gentle slope, and be seeded to preserve it. Before this is done, however, a *cistern* of the capacity required should be constructed in the earth close by, and opposite the centre of the embankment. The earth excavated will serve in a great degree to form the embankment.

Then a pipe should be laid from the bottom of the pond to the cistern. This pipe should be supplied with a valve that may be opened from the dam, and the water drawn from the reservoir into the cistern.

The water should be allowed to stand to precipitate its silt, before it is decanted into the cistern.—The size of the reservoir, of the cistern, and the pipe, will all be decided by the engineer, who will be expected to know what provision under the circumstances is to be made.

THE CISTERN

Need not have a brick used in its construction, but be cemented on the natural earth, and the arch may be made of concrete.

A PUMP

Should be set in the arch, and a durable trough supplied for stock water. Should it be desirable to conduct the water from one of these cisterns to any lower point, for any purpose, it will only be requisite to lay pipes for the purpose; but should the water be needed at some more elevated point, it may be forced by means of a wind-mill—and sufficient for the use of a family to almost any desired height.

J. WILKINSON,

Landscape Gardener, Rural Architect, and Draining and Irrigating Engineer, Baltimore, Md.

Fresh eggs, according to the *Maine Farmer*, afford great nourishment to weak animals. It tells of a colt which to all appearances was nearly dead, the breath of life being barely perceptible, which almost instantly revived by giving it one or two fresh eggs. The same results have attended the administering of eggs to weak cattle, and to feeble chilled lambs. The remedy is a simple one, and farmers would do well to bear it in mind. In this connection a hint to boarding-house keepers may not come amiss. If they would only put fresh eggs instead of spoiled ones on their tables, they would keep their guests in a better humor, and some of them might check the waning prosperity of their establishment.

SOWS EATING THEIR PIGS—Breeders generally agree in the opinion, this habit arises from costiveness. Feed your sow on roots, such as turnips, parsnips, &c. If these are not at hand give a little charcoal with sulphur once or twice a week. Don't use heating food.

ESSAY ON WHEAT.

BY T. R. ALLEN, OF ALLENTON, MO.

Read before the Jefferson County Farmers' Union, December 14th, 1871.

The incomprehensible wisdom of the Creator, is perhaps nowhere more conspicuously seen, than in the general adaptation of so large a portion of our earth, to the production of this staple article of the food for the human race.

Coeval with history of nations and peoples, we have the history of this grain; even in the fabulous mythological ages of the world, and through every age and period since.

The modes of culture, harvesting, threshing, manufacture, or preparation of this as an article of food, has been various in the different ages of the world, and among the different nations of the people.

It is the grain most generally used by the human race as an article of food, with perhaps, the single exception of rice.

No country in the world, surpasses ours for the production of this important grain.

Our average annual product now is about three hundred millions of bushels—nearly twenty pounds each for every human being in the world. At all events, this would give twenty pounds each, to nine hundred millions of people. The world is supposed to contain about one thousand millions.

But what is of more practical knowledge for us to know, is the best methods of cultivation adapted to our present circumstances and condition.

These may include climate and soil, preparation of land, time of planting, variety, time of harvesting, threshing, and preparation for market.

I take it for granted, that these are the points on which I am expected to speak. I may remark here, that on all these points, the best of farmers, more or less, differ from each other. But by meeting together on occasions like this, and comparing notes and experiences; and interchanging views, we may mutually instruct each other, and facilitate a harmony of views and interests on this important subject.

Permit me to indulge in a few remarks here that may not be considered exactly appropos to my subject.

I rejoice in view of the fact that farmers are waking up on this subject of organized effort for mutual advantage. Permit me to say gentlemen—and I do not say it to flatter you—God forbid, but in the earnestness of my heart, that you deserve great credit, and the thanks of the farmers of this whole nation for your effort at organization, and for this meeting here to-day. You are pioneering what we hope and trust to be a mighty revolution that is to change the status of farmers from our present servile condition, to that elevated and noble character that our numerical importance, and comparative value of our productions entitle us. I have no fear gentlemen, that the influence of this noble example of yours is to be lost upon the farmers of this county; but that it will be as seed sown in good ground, bringing forth fruit of many fold. Pardon this digression, and I will proceed to my subject.

OUR CLIMATE.

—by which I mean our particular locality, is well

adapted to fall wheat. All efforts at growing spring wheat here, so far at least as my knowledge extends, have proved failures. I think it simply folly, to attempt to grow it here, and will spend no further time on the subject of spring wheat.

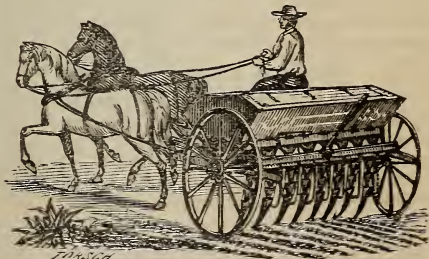
OUR SOIL.

Our upland limestone clay soils, are well adapted to fall wheat, especially if the exposure is east, south, or west, but never north, if the land is steep. On all such exposures, it winter-kills badly; at least three times out of five, and when it escapes this, it is later ripening, and more liable to rust.—Our rich alluvial bottom lands are not well adapted to wheat, though we occasionally get a good crop from such land. Besides the liability to fall, and rust, the grain is never so perfect and plump, nor of so good a color, nor so heavy, as when grown on the uplands.

THE PREPARATION

Of the land for a crop of wheat is a very important matter, but is dependant on so many conditions, that it is impossible to give a general rule that will apply to all cases. Under certain conditions, the cultivation of the corn crop on the land, is a good preparation for a wheat crop. If the land is in good heart, the corn planted early, well and thoroughly cultivated as long as it is not injurious to the corn to do so, all the weeds and grass kept down, the corn cut off early, the wheat may be sown broad-cast and put in with shovel plows.—But if the land is allowed to become foul with grass and weeds, this will not do. If wheat is to be put in at all in such a case, the land must be plowed with a breaking plow, and then you have the corn stubble with large clumps of earth adhering in the way of the harrow, or the drill—if you can use one at all under the circumstances—and they will be in the way at harvest, unless subdued by a roller in the spring. I do not consider this a good preparation for wheat.

Lands cultivated in tobacco is usually a good preparation for wheat, if the tobacco crop is early, but it is usually too late when the tobacco comes off. A potato crop is liable to the same objection, but sometimes does extremely well.



The Favorite Wheat Drill.

WHEAT AFTER WHEAT

Ought not to be encouraged. Yet this often does very well if not repeated too often. Once may do very well, but the ground ought to be plowed immediately after the crop is taken off, turning the stubble well under. If done thus early, it can usually be much better done, and be much lighter on the team than if delayed until August, by which time the ground becomes very hard from our usual summer drouth; and from the want of moisture, the stubble does not rot; the land gets to be lumpy

or cloddy; a second plowing, if it all practicable, is difficult, and in many cases useless. You are then liable to have volunteer wheat, and in case you are changing your variety, a mixture; and, in addition to this, you are fostering a nursery of chess, smut, and whatever foul seed may have infested the previous crop. This is not a good preparation for wheat.

SUMMER FALLOW.

But, perhaps, the best and surest of all preparations is the summer fallow, by which we mean plowing the land in the spring and re-plowing at intervals through the summer. The intervals should in no case be long enough to allow any weeds or any green crops, such as peas, rye or buckwheat, that you designed to plow under, to ripen seed.—The advantages of this mode are the improvement of the land and the increased chances of a good crop; besides, it aids in a proper rotation and evinces a more intelligent and consequently a better husbandry.

Next best to this, in my opinion, is to turn under a clover sod, or a crop of green clover—second crop; that is, mow or pasture the first crop. Let second crop get up so as to ripen a portion of the seed—say about the middle of July—varying according to season. Turn under as completely as possible, harrow occasionally or use a cultivator in addition to the harrow, to keep down weeds until seeding time, then put in your wheat with a good drill, and if you fail of a good crop, you may console yourself with the reflection that it was not your fault—you have done your duty. The advantages of this mode are: You are improving your land, perpetuating your clover crop without re-seeding, and increasing the chances of good wheat crops.

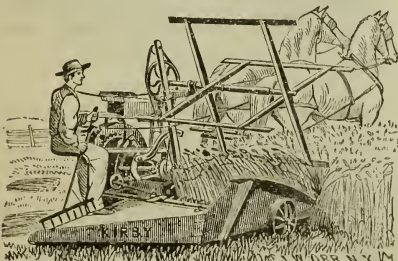
TIME OF SEEDING,

In our locality, from the middle of September to the middle of October; the nearer the centre between the two extremes the better. I would not seed earlier than the middle of September if I were ready and had nothing else to do, and I would not like to seed later than the middle of October, if I could help it, though it sometimes does very well after that period. Very early seeding favors the Hessian fly and other insect depredators; and very late, winter-killing, smut and rust.

QUANTITY OF SEED PER ACRE.

With the best preparation, and the proper time for seeding, three pecks per acre with the Drill, and four pecks broad-cast.

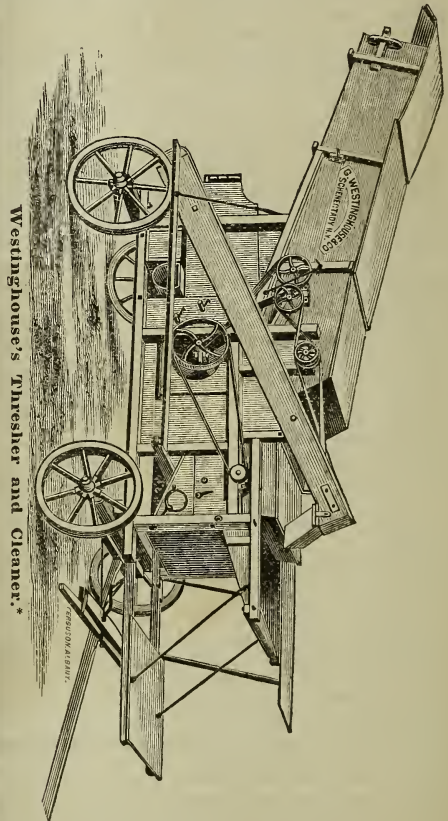
With inferior preparation, and when late, add more seed; for the reason that in either case, more or less seed is lost or destroyed.



Reaping Machine.

TO DESTROY OR PREVENT SMUT.

Soak your seed a few hours in a strong solution of common salt; draw off the brine and spread on a dry floor a few hours, and it can be sown broadcast, or with the drill, without any sort of difficulty. The chemical action of the salt destroys the smut. For this purpose I use a tub or common barrel, with spile in the bottom; a fine wire screen tacked over the spile hole to prevent the wheat from running out with the brine. Set the tub upon a bench or block, fill about two-thirds full of brine, pour in the wheat slowly, skim off all that floats; stir well, to mash any grains of smut that may not float. This is a certain remedy for smut, and an additional advantage to the wheat. The brine may be used as long as it will last, adding some fresh occasionally to supply the waste. A good farmer will not sow smut, rye, oats, chess, cockle, or any other foul seed with his wheat.



WHAT VARIETY SHALL WE GROW?

This question is more easily asked than answered. We all have our preferences. There are a great number of varieties of fall wheat, and many of them well adapted to our locality. I do not like

*The above cut represents a machine long and favorably known, and which, from our own experience in the past, we can recommend as a machine always sure to give satisfaction. There are many other good threshing machines manufactured.—Eds. Farmer.

any of the bearded varieties, though some of them are very good. Some think them more hardy than the smooth varieties. I do not think that is quite clear; nor do I think they yield so well. I have a prejudice against the beards, at all events. I have tried many varieties both of the bearded and smooth-headed varieties and all shades of color, but have always been inclined to favor a smooth-headed white wheat, especially if it be an early ripening sort. I presume that it is unnecessary for me to say to you that I give the Tappahannock the preference, but I will give you my reasons for it.—It is hardy, tillers well, has a stiff straw and not liable to fall; not too tall, ripens early and evenly; it is a large grain, usually plump and very heavy, weighing from sixty-two to sixty-five pounds to the measured bushel.

Some millers complain that it does not grind out well. My experience is different. I have made from forty-five to fifty pounds of good flour to the measured bushel of it. It usually sells for the very highest price of any in the market, notwithstanding the millers' objections. Its yield per acre is equal, if not superior, to any other I have ever tried.—Some farmers complain of its liability to smut. I have found no difficulty with it in this respect, in an experience of nine crops in succession—have not found it more liable to that disease than any other variety; and if it were, the remedy is so simple that it would not amount to an objection with me.

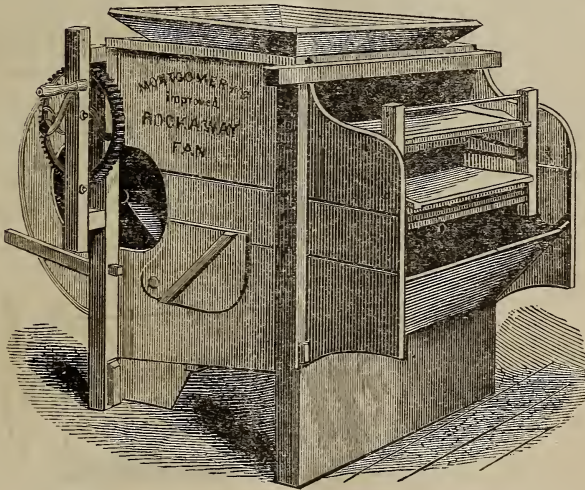
tent, ought to have a thresher of his own. It is bad policy as well as slovenly farming, to grow mixed varieties. Hardly any two ripen exactly together. Yet a large majority of farmers are growing mixed varieties.

TO OBTAIN PURE SEED,

go into your field when the wheat begins to ripen; you will find spots on a southern slope, in advance of the rest of the field; from these spots select the ripest and best developed heads; with your pocket knife cut the stalk about ten inches below the head; when you have a handfull wrap a straw around it; throw in bunches; carry out in sacks or baskets. For every bushel you gather in this way, with a little extra preparation of land, you ought to grow from thirty to fifty bushels of pure seed and improved wheat the next season. I know whereof I affirm, for I have tried it. By this method, you not only get pure seed of the variety you desire, but you improve its quality, and promote early ripening, and are thereby likely to escape the disease called rust.

TIME OF HARVESTING.

My opinion is that we generally put off the commencement of harvest too long. When the grain is in the dough state it is the proper time to cut it.—This may be told by taking the grain between the thumb and finger, and, if upon squeezing, no



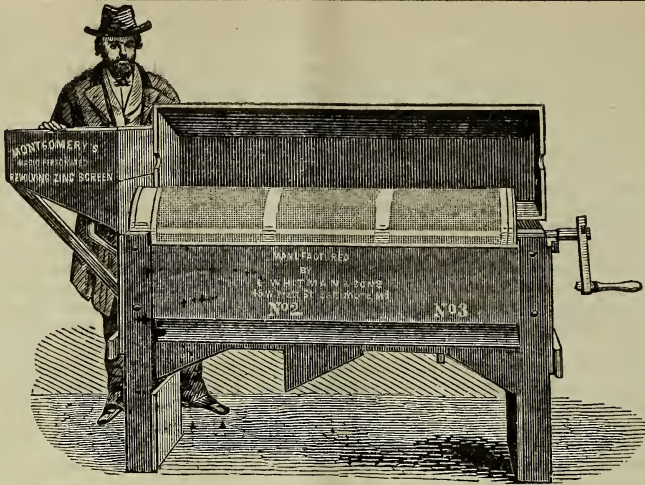
The Celebrated Montgomery Wheat Fan.

GROW BUT ONE VARIETY AT A TIME,

on your farm. It is almost impossible to keep any variety pure, if more than one is grown on the farm at the same time. This is the principal reason that so few farmers ever have a pure variety. Another reason is threshing on itinerating machines. Every farmer that grows wheat to any considerable ex-

milky substance appears, it is fit to cut, whether the straw is of a color to suit your views or not.—Of course, we have to be governed at this time somewhat by the weather. If it is cloudy and the atmosphere very moist, whether it be raining or not, better wait a few days. But the sooner you get your wheat into shock now the better, for you are liable to wind-storms and hail-storms. After it is cut and cured, no time should be lost in getting it into the barn, or in stack, for we should ever remember that our wheat crop is never safe until we have it in the sacks.

*These justly celebrated Fans are now universally acknowledged to be the best of all fans sold in this country. They have taken over two hundred premiums, and have beaten every Fan sold in this country.—Eds. Farmer.



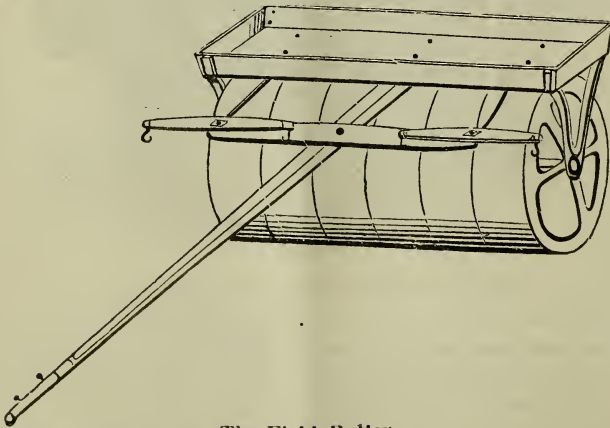
Montgomery's Magic Perforated Zinc Revolving Screen.*

TIME OF THRESHING AND MARKETING.

Many think it better to allow the wheat to go through the sweating process before threshing; this being the safest condition for it to go through that natural process, and it is besides claimed that the color is improved thereby. This takes several weeks, according to the state of the weather, varying, probably from three to six or eight weeks. I prefer to thresh as soon possible without regard to this—to get it into market, and the money in my pocket; then I know that my wheat crop is safe, though it may not stay long in my pocket. Wheat is continually wasting from the time it is cut until it is sold, do as you will with it. The sooner you sell it the less your loss by waste. It will pay to take some extra pains in cleaning your wheat for market, as well as for seed. Every farmer should

have a good fan, with riddles adapted to all kinds of grain and seeds. By this means the small grains of wheat may be taken out of your seed wheat.—These small, imperfectly developed grains ought not to be planted. It is my opinion, that with proper care and attention, there is no reason at all why our wheat should deteriorate in quality and yield. And although we may not be able to make two grains grow where one did before, we may be able to approximate it.—*Illustrated Jour. of Agriculture.*

*This machine is acknowledged by all who have used it and all who have seen it work, to be the most simple and complete machine which has ever been invented for preparing wheat for seed. It gives the largest and heaviest wheat for seed; is suitable for all kinds of wheat; takes all cockle out; does its work speedily, and takes only two men to work it.—*Eds. Farmer.*



The Field Roller.

Among the various implements used on the wheat field is the roller, which is significant of good culture, of neatness and thoroughness. Fields that have been seeded should not be considered finished until the roller has swept over them, crushing the lumps of earth, and pressing small stones, &c., out of the way. The best covering for grass seed is given by the roller. Where the roller is used,

smoother fields and easier harvesting and mowing will be the result.

We have taken the liberty to illustrate the above "Essay on Wheat," with the various implements adapted to the culture and preparing of the seed for market. We have omitted the plow and the harrow, which play an important part in every wheat field. *E. S. Maryland Farmer.*

CROPS AND THE DROUTH IN HOWARD.

Winter Wheat.—The acreage of this crop was somewhat diminished at the last seeding owing to the growing opinion that wheat does not pay: we noticed a large fine field in rye, on the Frederick turnpike beyond Ellicott City, which we suppose no one would have thought of putting in rye a few years ago! Other farmers in the county also appear to be giving more attention to this crop than formerly, and the decrease may be estimated at five per cent. The high price of wheat at present (\$2 25) is making farmers who sold last fall (at \$1.50) regret their haste, but the difference is not so great as it appears on the surface when we calculate interest, (at present high rates,) shrinkage, loss and additional cost of marketing at this time. The question of early marketing a crop or "holding on for a high price," has been frequently discussed: it is held by deep students of the laws of trade, that it is best as a rule to market a crop when it is ready: with many farmers, necessity, not choice, would dictate their course, even if they *knew* the price would be up; but unless the price is very low, whenever a paying price can be obtained, we think it a good rule to go by in view of the uncertainty of the future and the very serious loss from many sources: risk in storage, vermin, interest, insurance: greatly increased cost of marketing in the spring and shrinkage: the latter would be a good subject for our agricultural college to experiment on: the shrinkage on wheat is estimated at one fourteenth in weight.

Average Condition.—The long drouth in the spring at which time a rapid growth is necessary—and is generally made—to shade the land from the burning sun of early summer, has had a ruinous effect on wheat particularly where sown very thin, on light land, as tillering has been prevented. We are able by our own experiments to throw a little light on the question, how much seed wheat per acre? Usually we have found five pecks per acre sufficient on good or poor land: this year we have two fields in Boughton white wheat; both were sown with five pecks per acre; one is good land and appears to have a sufficient quantity of seed: the other is poor land—producing last year, which was a very bad oat season, however, in oats only twenty bushels per acre;—and while in a good season that quantity would have answered on that land giving a fair crop of first quality grain, this year the straw is very thin; and the ground being only partially covered in consequence of not tillering, which exposed all the land to the unbroken heat of the sun: hence, as a rule five pecks are sufficient on good rich land: on poor land six pecks should be sown, although we have raised fair crops from five pecks.

On our best field where one land was sown at the rate of six pecks per acre, the difference is hardly perceptible; so small quantity as a peck scattered over an acre making very little difference in any way, except in cost of seeding, which, with wheat at three dollars, is an item worth considering; but each farmer should experiment for himself in these matters before following the directions of others. The above seeding was all broadcast. But notwithstanding the severe drouth, the good rich land of this county contains wheat that would be called 'good' in the best of seasons, whilst the poor land will yield from three to six bushel per acre!!!

Comments on this fact we consider unnecessary to the improving class of farmers: the other class I handover to the Joodge and Mr. Dunk.

Condition of Oats.—Oats make their growth of straw in the cool and moist weather of early spring: the oat is a plant of cool latitudes and does best in those countries—the north and England, Ireland and Scotland, in which it is surrounded by these conditions: poor land will produce oats in a wet season which will hardly return seed in such a season as the present: hence, unless we have a cool moist and protracted season—which is almost impossible now—the oat crop will be very light. I saw by the *Farmer* sometime ago that some gentlemen were substituting barley in the rotation for oats in consequence of the peculiarity of the latter plant: it will not grow on poor land (neither will barley) and falls down on rich land: barley might do for our best and richest lands but requires good land. Has any successful effort been made to replace oats by barley?

Corn.—The cool dry weather gave farmers a poor stand of corn, and what did come up has been much damaged by the cutworms whose depredations have been more serious this year, than in any other year within our memory; the complaint of their great numbers and mischief is universal: this worm flourishes in cold weather and from date of planting, (April 25 h) until June—a period of five weeks this cool weather has continued and so great have been the damages of the worm, that some farmers have been obliged to furrow out their whole field and plant anew, and in view of this extensive replanting, the corn crop will be short without a late and favorable season: the worm this season appears to have had ravaged the fall and spring plowed land alike, the difference being usually in favor of fall plowed land.

Grass and Pasture.—The earliness of the drouth this year before the spring start enabled the crop to shade the land has left a very little clover or pasture: on good rich land the clover is now in full blossom, though only eight or ten inches high, and pasture is correspondingly short; it is now time to cut, but the shortness of the grass of course will permit a very small portion only to be gathered; this is on the good land: on poor land there is hardly any grass, and as springs and streams are generally drying up, our farmers feel that the burden is very great to bear; we do not forget that at three different times during the drouth—from April 15 to June 8th, we have had rain but not in sufficient quantities to effectually relieve the drouth.

NOTE.—Although the above remarks describe the prospect in one county, our readers will notice the strong bearing of the remarks on our agriculture in general.

THE
MARYLAND FARMER,
A STANDARD MAGAZINE.

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Proprietor.

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Conducting Editor.

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Associate Editor.

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BALTIMORE.

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John Merryman,
Luther Giddings,
Ed. L. F. Hardesty,
D. Lawrence,
John Lee Carroll,
John Carroll Walsh,
Daniel C. Bruce,
Augustus L. Taveau,
Richard Colvin,

John Feast,
John Wilkinson,
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C. K. Thomas,
John B. Russell,
Depart. of Agriculture,
Prof. Wm. P. Touhy,
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BALTIMORE, JULY 1, 1872.

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Collections on yearly advertisements made quarterly, in advance.

Maryland State Agricultural and Mechanical Association.—The Rooms of the Society for the present are located at the corner of Charles and Lexington streets, Baltimore, where Farmers and Planters of this and other States are cordially invited to call whenever they may visit the city.

GEO. S. BROWN, *President.*

D. C. TRIMBLE, *Gen'l Secy.*

LAYING DOWN GRAPES.—The *Prairie Farmer* recommends laying the vines down in the direction of the rows, on the surface of the ground, and throwing earth on with a plow. Furrows should not be made on retentive soil, as the buds may become soaked and rot.

OUR CONTRIBUTORS.

This number begins the second half of the volume of our magazine for the present year. In looking back to January past, we are delighted with, and feel honored by, those lady friends who have brightened our pages by their graceful and agreeable writing. Of our gentlemen correspondents we are justly proud, for they are nearly all practical as well as highly intelligent. They write only as "the spirit moves them," and only because they feel deeply impressed on the subjects upon which they write, and impelled to do so, not for fame, but for love of the great and all absorbing cause, in which we are engaged, heart and soul, to build up and support and advance, because it is the rock and hidden reservoir which, under God's control, pours out its gushing blessings whenever a true believing Moses strikes.

The last issue closed the able essay of Mr Wilkinson on the important subject of Draining, and it will be seen he has also in this number treated us with a very interesting article on matters of the highest interest to everybody, and at the time of its production, peculiarly felt to be so, a parching drought then blighting all the young hopes of budding spring. We trust he will continue to dignify our columns with his strong, able, attractive views of the agricultural interest.

In calling attention to the practical views of our esteemed correspondent, "*Marylander*," to be found in this number of our journal, we cannot refrain from thanking him for his complimentary notice of our "new departure," at the same time differing slightly with him; for we hold that a judicious use of the scissors, and an able corps of correspondents, have much more to do with establishing a journal in the confidence of the reading public than have editorials, especially so with agricultural journals. No one knows better than "*Marylander*," the difficulties under which editors labor, who honestly desire to cater for the true interest, as well as the gratification of the public. He having once wielded the editorial pen, knows all the troubles of an editor's sanctum, and hence we feel the more grateful for his commendations.

Our author of the "Dunk Papers," being a very modest man, would, we are sure, blush with gratified pride could he see, (as we do constantly,) how often his sober; common sense, practical and useful effusions are copied in our rural exchanges. This fact proves the popularity of his writing.

We feel sure our readers would scold us if we forgot the old "*Plowman*," whose scathing pen often has enlightened and amused us at the same time.—Though his locks are white, we hope it is only the autumn frost, indicative of the far off winter. The

ladies would scarce believe the pretty little poem in the June number was the sportive effusion of a septuagenarian of Baltimore county.

The young farmers no doubt are pleased with, and have profited by the advice of "*Land Mark*." His numerous essays addressed to them, will give instruction and valuable hints to the experienced farmers also.

To one and to all who have contributed to our journal we return thanks, and solicit a continuance of their favors. We regret that our talented "regular contributors" have of late been remiss in letting us hear from them to a degree that we might call them our corps of "*irregulars*," instead of "*regulars*." Notwithstanding, careful readers will see that we have more original matter written for our journal than appears in any other agricultural monthly that is published in this country. It will be perceived that the present number is made up almost entirely of original matter.

NOVEL FEATURE IN BALTIMORE TRADE

Messrs. E. Whitman & Sons received orders from Mr. J. Newton Lewis, of 149 W. Pratt Street, to ship various implements, such as spice mills, cotton gins, and buggy plows, to some Americans who are farming near Santos, in Brazil. From Mr. L. we gleaned much that was interesting from his correspondence with his far-away customers. One of these parties writes that he left the United States only five years ago, with \$1,000 only. He is now out of debt, has a fine farm, and the owner of six negroes. His crop of cotton this year is 60 bales, of 500 lbs. each—grown on fifteen acres, the land being so productive it yields 2,000 lbs. of cotton per acre. The usual yield of corn is 10 barrels per acre. Besides, all the tropical products, sugar and rice are easily grown, and highly remunerative.

The country is represented as level, with some trees and roots, but no rocks to impede cultivation. The soil is loose and mellow, seldom either too wet or too dry for culture. They plant the cotton and the corn in rows about five feet apart, from September up to Christmas, and they generally commence picking cotton the 1st of February.—What a difference is made in the seasons by latitudes! It must be a fine country from what is said of it, and we wish success to this little colony of enterprising Southerners in their new home. This exportation of implements will no doubt be the beginning of a large trade ere long, in agricultural machinery between our Baltimore machinists and the farming community of Brazil, for the superiority of our improved labor-saving machines must be immediately recognized by those people who have nothing but primitive tools, and the rudest old-time implements.

MEETING OF THE MARYLAND AGRICULTURAL SOCIETY ON THE 8TH OF OCTOBER, 1872.

At a recent meeting of the officers of this association, as will be seen by their Premium List, inserted in this number of the *Farmer*, determined to hold their next meeting in October, to commence on the 8th and continue several days. The last meeting was unsatisfactory to the society, exhibitors, and the public, owing to the extreme inclemency of the weather, and great deficiency of means of reaching the grounds. To get to Pimlico involved much expense, or great inconvenience in going in the crowded public conveyances. The Jockey Club, in connection with the Agricultural Society, will, we feel sure, make some arrangements by which greater facilities for visitors to reach the ground, by an extra number of vehicles, by a horse railway, by more trains on the Northern and Central Rail Road, and easier access from that road to Pimlico, will be secured for the public convenience; besides it is hoped that the Western Rail Road will offer some important measure of relief in the matter. Through the exertions of Mr. D. C. Trimble, the energetic Secretary of the Association, the Legislature was induced to follow the example, in a limited degree, of all the enterprising States of the Union, and appropriate \$5,000 to the society, with lesser sums for the county societies. This donation, and the increased revenues of the society, will enable it to free itself from all indebtedness, and establish itself on a secure foundation. Its list of premiums will be found to be liberal, amounting to nine or ten thousand dollars, for which it is hoped there will be many spirited contests.

There should be perfect harmony, and mutual interest between the State and county societies, in building up and sustaining each other. There should be no conflict, if possible, as to the time of holding the meetings. The State society was restricted as to its time, for September was deemed too early, owing to the warmth of the weather usual at that season, and after the second week in October, by contract, the fair grounds go into the occupancy of the Jockey Club for their fall meeting. It is true, the time selected unfortunately will be when wheat sowing is at its height, although as early sowing seems to be the order of the day, perhaps most of those who are likely to attend cattle shows will have nearly, if not quite, done seeding, and be all the readier for relaxation after their labors, and with a greater zest to enjoy the re-union with their fellow farmers. The auspices for a successful meeting are propitious, and we bid the enterprise God speed with all our heart.

Every farmer ought to read the *Maryland Farmer*.

PUBLIC ROADS.

The committee appointed by the general meeting held in Baltimore on the 28th of March past, in pursuance of the authority vested in it by resolutions passed at that meeting, met on the 8th of May, at the office of Somerville Norris, Esq., and appointed William Webster, of Baltimore county, Secretary. The committee proceeded to fill up the list of committee-men from the several counties, and directed the secretary to issue a circular to each gentleman so appointed, and they feel sure that they will have a full attendance at the next meeting, which is to be held on the 22d of August, at the Rooms of the Maryland Agricultural Society. The chairman, Mr. Lawrence, read a highly interesting paper upon the subject, showing how zealous and indefatigable he had been in collecting facts and arguments on the subject, as also many important facts from the laws, and correspondence with the Governors of the several States, &c. This paper called forth an animated conversation upon the respective merits of the two systems. A general system, such as is the present unpopular system in Maryland, by which the roads are in the hands of, and under the control of, the several County Commissioners; and the other, that of a local elective or district system, which seems to prevail where ever good roads are the rule and not the exception. While there was, as was to be expected, a contrariety of ideas and opinions expressed, such was the harmony and union in desire to accomplish the object aimed at, there is no doubt the committee at its next meeting, when it will be full it is hoped, will come to such a conclusion as will command the popular sanction, and recommend the system they will suggest, to the approval of all sound judging men in the State.—The committee so far are working with a patient will and untiring effort, and we feel sure their labors will be crowned with success. It is, however, very important that every county in the State should be represented at its next meeting, that the report of the committee may reflect as large a public sentiment as possible when presented to the general convention, hereafter to be re-assembled.

COMMUNICATIONS.

Why will our practical, observing workers of land hold back, and not write in our pages for the benefit of their fellow farmers? They should detail the course of their farm management, their experiments, their successes or failures, their theories and practice, or accidental discoveries, condensed in a plain statement of dates and facts, no matter how simply or plainly told. Let them not be diffident, or too lazy, but write to us, and through us to all their fellow farmers. Much good will be the result of such interchange of sentiments. We desire

to have our journal known as the channel of social talk between the farmers and planters, and all who are interested in agriculture, so as to reflect monthly the condition of the stock and state of the crops, as also a free interchange of views upon all subjects relating directly or remotely, socially or politically to the progress of farming, and the furtherance of the interests of the farmer and planter of the South particularly. One of the most attractive features in every newspaper is that portion occupied with short letters from the people. Let us then in the future have a hearing from our many readers. We have room for all, and a hearty welcome for every sun-bronzed son of toil.

OBITUARY.

We are pained to announce to our readers the death, on 17th June, at Lyl Park, Pikesville, Baltimore county, of Mr. GEORGE H. MITTNACH, for some years past our valued correspondent on Grapes and Grape Culture. Mr. M. was a practical and scientific viner from the Rhine, near where the famous wines of Prince Metternich were made. The death of such a man is a great loss to the public, to us an irreparable one. He lived for forty years in the land of his adoption, and was always esteemed for his industrious habits and zeal in horticulture, and respected for his high integrity. His various contributions to the press speak most favorably for themselves. He lived the allotted time for men to die, being on the verge of three score and ten. He sleeps in Greenmount Cemetery, where all that was mortal of this useful citizen was committed to mother earth by Rev. Dr. Grammar, Rector of St. Peter's P. E. Church, assisted by Rev. Dr. Lockwood, of St. Thomas' Church, Pikesville. He was followed to his last resting place by a large concourse of mourning relatives and friends.

ACKNOWLEDGMENTS.

We return our thanks to the Hon. F. Watts, Commissioner of the U. S. Agricultural Department, for a package of select and rare garden and flower seeds, received last month.

We have received from Hon. F. A. Walker, Superintendent of Census Office, advanced sheets of the tables containing statistics of agriculture, which form part of the volume on the Industry of the United States, Ninth Census, 1870. It appears to have been carefully prepared, and reflects credit upon the Census Bureau. These statistical tables are of infinite value to all who desire to see the progress of the material wealth of the nation, and compare the advance or decline of different branches of industry in the several States, counties and townships of each State. We are compelled at this time, for want of room, to defer our remarks upon the many important suggestions which these tables afford, but will soon avail ourselves of the opportunity hereby offered, to lay before our readers some of the most important and interesting facts disclosed by this document.

OUR VIRGINIA TRIP.

Leaving this great mart of Southern commerce and trade on the 10th of May, on board the fast going and beautiful *Matilda*, with her polite and efficient, therefore popular, Captain Kirwan, and his officers, as our guardians, we first wondered at the amount of baled hay and straw that was put on board, seeing only two little mules, the only quadrupeds of any description aboard. On enquiry, it was for the *farmers* of Virginia. Here was a startling illustration of that sad condition of a people which a too violent rupture of domestic institutions had brought about. The denizens of a noble State, living in a country once fertile and groaning under the weight of its vegetable productions, sending to a *city* for hay and straw to feed their cattle. It also illustrated, to some extent, the excess of the drought. What would have been thought of this entry on the great books of trade between North and South, years ago, when Virginia won her fame as the Mother of States by giving away to the Union more territory than New England possessed twice over, and when she claimed justly to be the Mother of Statesmen because she furnished almost in succession for that *once* high and sacred office, the Father of his Country, Jefferson, Madison and Monroe. But these wondrous changes we will dwell on no longer than to exclaim, *tempora mutantur et nos mutamur in illis*. The day had been oppressively hot and dusty, uncommon for May, 92° in the shade! and it was a relief to feel a breeze free from suffocating dust as we glided down the Patapsco, passing points on its shores memorable in the history of the State, and so dear to the lovers of the *old Union*, whose memorized associations recalled the glowing incidents that gave birth to the "STAR SPANGLED BANNER," the brain-offspring of our Maryland patriot, orator and Christian advocate, F. S. Key.

We passed Forts McHenry, Carroll, and Bayview Asylum, the castellated monument of Baltimore's munificence in charity and good works. We soon after passed White Rock on one side, and Holly Grove on the other, rival places for picnic and summer resort. Next we hailed "Pile of Rocks," so distinguished for fine fishing with the rod and line. Just then we entered or closely approached the Bay, when a scene of wondrous beauty burst upon our vision, as the sun slowly sinking behind the distant green hills, gave a mellow touch to a fleet of some fifty sails and a dozen steamers, like children sporting and gliding in the placid waters of the beautiful Chesapeake. Night soon closed in foggy and dark, with only the phosphorescent track which the swift turning paddles and lights of the boat left behind, looking like a silvery stream between two dark high walls.

When the sun rose bright the next morning we were all ready to hail Virginia at the mouth of her beautiful Rappahannock. As we touched at the different landings and steamed along, we had an opportunity to see for ourselves, and were fortunate in meeting several intelligent citizens of that section, and "interviewing" them. We saw lovely spots for dwellings, which Nature seemed to have designed for the homes of the lover of the picturesque, the husbandman, the artist, the sportsman and the gourmand. All along this river really fine land abounds, but now presents a woefully neglected appearance. No grass seed seemed even to have been sown, and yet the fields were green with some sort of vegetation, notwithstanding the unprecedented drought. The river is full of the best shell fish, and all sorts of fish, trout, rock or bass, sheep-head, &c. Lancaster county is represented as healthy, and abounding in wood, water, and naturally a fertile soil. The lands are for sale cheap. There are some cozy nooks, covered with oak and pine, with little creeks for boundaries, in which fish, crabs and oysters multiply, and can be had for the mere trouble of picking up—where geese and ducks in immense numbers resort to feed and retire for the night, and where they can be killed in crowds from a man's parlor window, if he so choose. What a paradise for the sportsman and the lover of the good things of life! A few hundred dollars would secure such a haven for the wearied man of business, and the ennuied man of leisure.

At Sharp's Landing there is a wharf and bridge 200 feet long. The land looked to be fertile, and presented the appearance of a prairie, on which a straight dash of four miles could easily be had anywhere. What a region for the growth of early vegetables! and yet we saw no effort made in that direction. Much of it seemed uncultivated. We asked why these lands were left idle. The reply was "we have no labor, plenty of people, if they would work, but the negroes are idle and lazy, depending on fish in summer, and oysters and wild fowl in winter for food, with now and then a little work to get corn bread and scanty clothing." Lands are for sale at less than one-fourth their price before the war. We learned that before the war there was more wheat sown annually than now harvested. Sad!

Southern soils are inexhaustible and beyond value if they were fully developed. We met an intelligent agent, who was prospecting for a peculiar white clay that stands fire, used for furnaces, &c., and also for making satin paper. He said it was very costly, and a good strata of a limited extent was a fortune to the possessor. What treasures are hidden in our lands, and ultimately to be brought to light by science and the skill of the delver. How little the great mass of the owners of land know

what their lands are worth, owing to ignorance of geology, chemistry, and the uses of different soils or strata of the earth. Let then the farming community be educated up to a much higher standard, that we may have at least one scientific man in every neighborhood. In this way alone can agricultural colleges ever pay, and for this they have been established; but what have they accomplished as yet?

In going up the river we stopped at the landing of one of the firm of "Landreth & Sons," of Philadelphia, the famed seedsmen of many years standing. The buildings and the cultivation—the life and bustle—the neatness and order, proclaimed an oasis in a desert. What a contrast! Here was energy, enterprise, skill and capital. Bought for a seed farm; 300 acres planted in turnips for seed! Turnip seed threshed and cleaned by horse-power and machinery adapted for the purpose. This one item made the old fogies of Virginia stare, and so did we. He uses large quantities of fertilizers we were told, and their use, with an improved system of culture, had acted like magic in restoring the neglected soil to its pristine vigor and productiveness. From this one example Virginians should learn much, and denizens of the high priced lands of Pennsylvania, and the poorly yielding lands of North can take the hint where advantageously to invest capital. At Tappahannock city we landed, and took boat across the river to Richmond county, on our way to that grand old family seat of the Tayloes, *Mount Airy*, now in the possession of Henry A. Tayloe, Esq. This fine old English looking building stands on an eminence commanding a fine view of the river, and surrounded by flower and vegetable gardens on the one side, and a wide park like lawn on the other, studded with huge monarchs of the forest, such as chestnut, holly, oak, poplar, and other indigenous trees, that bear record of the palmy days of the Old Dominion. After enjoying the warm welcome and elegant hospitality of the accomplished hostess and her venerable father, (to our regret, our friend, the master, was absent,) we were whirled in a cloud of dust over fine roads, behind a pair of splendid thorough-bred mares, bred by their owner, to the little summer retreat for Washingtonians, *Kinsale*, in Westmoreland county. As we bowled along we thought of the immense estate attached to Mount Airy, five thousand acres, with its tenantry, and the poor prospects for a coop this year, owing to the distressing drought, and our thoughts went back to "long time ago," when Col. Tayloe, the grandfather of the present owner, delighted to be called the "Conqueror of the Turf,"—with the long array of splendid racers careering over those fertile plains, and the crowd of colored serfs so dependent yet so happy;

so free from care because so well cared for by a master, in whom they put all their dependence.

But here we strike a well-spring of thought—contrasts of present and past times in regard to that unfortunate race of our "brothers,"—which we have neither space nor heart to pursue, so we shall, tired and dusty with the sacred soil of Virginia clinging heavily to our garments, drop our pen and retire, hoping our readers may not be as weary of the telling of our journey as we were of it, and if they should seem willing to hear more in our next number, we shall resume our wandering musings along our travelling routes.

PREPARATION OF WHITEWASH.

Whitewash is one of the most valuable articles in the world, when properly applied. It prevents not only the decay of wood, but conduces greatly to the healthiness of all buildings, whether wood or stone. Outbuildings and fences, when not painted, should be supplied once or twice every year with a good coat of whitewash, which should be prepared in the following way:

Take a clean, water-tight barrel, or other suitable cask, and put into it half a bushel of lime. Slake it by pouring water over it, boiling hot, and in sufficient quantity to cover it five inches deep, and stir it briskly till thoroughly slaked. When the slaking has been effected, dissolve it in water, and add two pounds of sulphate of zinc, and one of common salt. These will cause the wash to harden, and prevent its cracking, which gives an unseemly appearance to the work. If desirable, a beautiful cream color may be communicated to the above wash, by adding three pounds of yellow ochre; or a good pearl or lead color by the addition of lamp, vine, or ivory black. For fawn color, add four pounds umber—Turkish or American, (the latter is the cheapest)—one pound Indian red, and one pound common lamp-black. For common stone color, add four pounds raw umber, and two pounds lamp-black. This wash may be applied with a common whitewash brush, and will be found much superior, both in appearance and durability, to common whitewash.

"WELL, Sambo, is your master a good farmer?" "Oh, yes, he be a very good farmer; he made two crops in one year." "How is that, Sambo?"—"Why, he sell all his hay in de fall, and makes money once; den in de spring he sell all the hides of de cattle that die for de lack of de hay, and makes money twice."

A MAN sold a farm a few days since as "perfectly level." The buyer went to look at it, and found a mountain on it. "But," said the man, "the land will be perfectly level—after you take the hill away; I sell you the level land underneath, and throw in the mountain!"

JAKOBB DUNK PAPERS
ON
FACTS, FILOSOPHY AND FARMING.
PAPER NUMBER X.

On Agricultural Book-Keeping.

We are getting nearer every day to the realization of the idea that the pursuit of agriculture is a *business*, and cannot safely be exempted from the operation of those general principles which are considered essential in other vocations. Our agriculture has suffered greatly from the absence of *system* in our management; we ignore the fact that the splendid achievements of commercial, mechanical, educational and professional enterprise are due to the rigorous systemization of the modes of procedure. What merchant is unable to tell the exact cost, delivered, of a package of goods?

How many farmers can tell the exact cost delivered of a bushel of clover seed, a barrel of corn, or a ton of hay?

It would be impossible for any other vocation to survive this ignorance of the cost of the wares it brings to market, and upon the same reasoning it is not any wonder that our agriculture is embarrassed.

I was waiting a few minutes at the Codge for my mail, and as all the local gossip had been exchanged by the news-peddling Mrs. Grundy's--reputations are foot balls at the rural commercial centers—I began to throw out a few hints of the necessity of finding out what our crops were paying us, and *which* crops were paying it, in view of the small returns from such large expenditure in capital, labor, interest, fertilizers, seed and current expenses. Jakobb was there, (he had been there for three hours,) waiting for the mail too, I presume; or rather waiting to see other people get their mail, for he "didn't take no paper;" and—if I ever omit the communication of the important fact it is unintentional—his pipe was with him.

"How you goin' to do it?" said Jakobb, behind his cloud of smoke.

"The same as other callings do," I answered; "by simply keeping a record of receipts and expenditures."

"You mean reg'lar book-keepin', don't you," asked Jakobb.

"Systematic book-keeping I mean," I answered.

"Well, I'll tell you wot you'd better do," said Jakobb, and his spirit was humorous, "you'd better git up another petition to the legislatur to furnish every farmer with a reg'lar town book-keeper to fix things up straight for him."

This amused the by-standers: Jakobb was in his element now, and he knew that his opposition to innovation, that is in his own expressive dialect, "these new-fangled ideas" would be warmly received by the lordly tillers around him. I did not ask him how he would like to pay the taxes, but replied with gravity,

"That would entail unnecessary expense upon the agricultural community, and would be contrary to previous efforts designed to increase the income and diminish the burdens of farmers; why could not each farmer do it for himself?" I asked. Let me work in here a bit of "fillosophy." We are urged to "answer a fool according to his folly;" but for the complete discomfiture of a person who wants to make a fool of himself, and you also, give me plain

solid sense in good English, without any excitement. If the Truth keeps calm, it is already a victor.

"Now, Joodge," said Jakobb, "that's another o' them new hifalutin ideas o' yours that nobody 'bout yere baint got into; but—" and the old pipe had to be filled up, and his spirit was mirthful and gay—"ye can introduce the old custom of travellin' shoemakers that went 'round from house to house in them old times to cobble up the foot geers o' the people; and ye might git wun o' them town dandies to go 'round with his guse quill and foolscap, ritin up all the proceedinses of yer aggrichulkyral kommunites." This made another laugh at my expense, but I knew all the premises.

"Mr. Dunk," I remarked, "can a man make any clear profit by producing an article which costs him more than he gets for it?"

"Wall, not ordinarily," said Jakobb.

"Then, how can we find out what pays us and what does not, without keeping an account?" I asked.

"I never kep't no kount, nor them old time people that was as good farmers as any we've got now that makes more fuss about it," replied Jakobb, and the lordly tillers were jubilant. This was cutting very closely, but I replied very mildly,

"Mr. Dunk, the misfortunes of a great many people, and their heavy load of indebtedness, may be traced to their omission of the important matter of regulating their expenses by their income, which they could not do, having kept no account of either; and being ignorant of what crops were paying and what were not, they have followed the habits of the old time people, rotation, ruts, ruin and everything else, until it has brought them poor land, a poor living, the stocks of necessity and the lash of debt, and our efforts should now be directed towards the removal of these fetters upon our industry, that we may secure the best results for our exertions."

This was a broad statement, having a general application in truth, but Jakobb made a special application of it to his own case, and "flared up" directly.

In noticing Jakobb's frequent ebullitions of temper as a solution of difficult problems, I am reminded of Uncle Simeon Codling's remark when he was breaking a colt; the colt did everything to him a colt can do to a man; stepped on him, kicked him, stopped on the hill going down, stopped coming up and backed down, broke the dash board, and went through a variety of those pleasant little performances which indicate so strongly the inventive genius of the race, as well as its strength and agility. Simeon's temper remained unruined, and when he brought the colt back to the stable we remarked, "Uncle Sim, she didn't appear to rile you a bit." "Boys," said he, "I was as mad as a March wind, but was afeared to let the colt see it, for if I'd a got mad on the *outside*, the harness wouldn't a held the two of us." You may put this little tale down, Mr. Editor, as farmin' and fillosophy, half and half.

Jakobb got mad 'outside,' and began—

"Judge," said he, "I kin tel yu the reason its pore land; them rich fertilizer men has coaxed us on to raise crops 'at don't pay, and sold us wuthless fertilizers to raise 'em; then when a feller took a crop up thar, there's always plenty o' them commissioners to rob out o' a man what little he could sell, and then if he wanted a few stamps to help him out in a pinch, they'd charge a usurius intrust that's enuf to ruin enny man, and then we've got

to take fur our projuce j'es wot them fellers sees fit to give us, and we've got nothin' to say about it: but we'll reech 'em yit; we've got oats down to twenty-six pounds to the bushel, and the next move'll be to put wheat at fifty pounds, hay at thirteen hundred to the ton, and eggs at nine for a dozen; we'll show wot legislatures gits paid fur; that's the way to fetch 'em roun' to thar senses; there's where yer farmin' men kin git redress; there's where we'll fight 'em. I makes me sick to hear men talk about doin' all these things by yer Farmers' Clubs; hard workin, honest, industrious farmers has got too much to do now to waste time tendin' on club meetins, and heerin' fellers talk about big sheep and great milkin' creeters, and nar-rer gage, and sugar beet, and cheese factories, and market fans, an' all the other humbings. Giv' me the legislatur fur my part," roared Jakob, thoroughly warmed up to what Artemus Ward would call the "tremenjes okkashun;" but, alluding to Jakob's remark about raising crops that did not pay, I said, "Mr. Dunk, what crops have you raised that did not pay?"—and it took Jakob so long to hunt up an answer that he became a little more like the Heethen Chinees, who is represented as "smiling and bland."

Jakob's utter inability to tell what crops had been remunerative left his course open to the inference that he *might* have been raising things for twenty years which cost him a certain amount—beyond all returns—to produce. The lordly tillers "seen the pint" at once; and his case may be taken as a representative one. I heard a farmer—who was buying corn—remark, "when you can buy corn for three dollars a barrel, it is cheaper to buy than to raise it," and yet *somebody* was raising and selling at that price, very likely at a loss to himself, but he "didn't keep no books," and did not know it.

I heard a farmer remark, "I could have bought more wheat in the market for the money my wheat crops have cost me than I have raised," but he kept books and knew it, and changed his modes of culture accordingly. We have been following a system—I mean a course—by which some of our crops have "cost more than they have come to," and to find out what *will* pay we must keep a record of proceedings.

Keeping books on a farm is in *principle* what it is everywhere else, a record of stock on hand, expenses and receipts, but the practical working of the principle is accompanied by difficulties not encountered in other vocations. Let us see if we can adapt this principle to the operations of the farmer, and also what items should be upon the expense list and what should not, and when a just discrimination is made in this one matter, after all the outcry and "poor mouth" which has been made by farmers to the effect that "farmin' don't pay," I think it will be found that in most cases it *does* pay.

First, the books necessary are a day book and ledger; the day book for a minute record of all proceedings; in other words, a complete farm diary. The ledger for separate accounts, with the cash, the farm, each crop raised, the poultry, the cows, and the various departments of the complex vocation; a page should be devoted to a record of all changes in stock, date of coupling, births, &c., and a page to meteorological notes, or the latter may be kept on a sheet of paper tacked on a smooth board and hung up near the weather instruments.

The above is a simplification of the process which

may be made as elaborate as the individual farmer may desire. Upon this basis the day book would represent the work done. I give a sample from original entries:

MAY 22.—H. finished plowing and harrowing potato ground and laying off. S. & T. opening peach blow potato holes and putting up bars to cherry lot. A. M. H. S. & T. putting in early rose potatoes; T. went down to the doctors and post-office, P. M.

The ledger would then under the potato account charge the crop with the labor, seed, fertilizers and other expenses of putting it in. The cash account—to be kept in the ledger, or a separate book—should begin with date and statement of cash on hand—not a difficult matter with us now-a-days—and thereafter each cash transaction should be set down.

A difficulty now presents itself in the questions, 1, what items of expense should go on the farm account, and 2, what portion of the whole expense of putting in a crop may properly be charged against it; for instance, a field is sometimes grubbed, drained and cleared off at an expense greater than that of all the subsequent cultivation of the crop; should this be charged against the crop? Manure and fertilizers are applied; should this be charged against it? A poor piece of land is sometimes taken up, prepared at great expense for the plow, well cultivated during the rotation, finally seeded down, and then yields a large quantity of hay and pasture without other expense than that bestowed upon the previous crops; now, would it be a correct statement of the account to charge the previous crops with what had been applied to the field? It would appear not; and if not, what portion of the expense *should* be charged? Take the usual five year rotation of Maryland; corn, oats, wheat, hay, pasture, then corn, &c.; a proper system of culture looking to the permanent improvement of the land, would induce an application of fertilizers upon each cultivated crop, that would also be beneficial to the hay and pasture crops. This course is frequently—I should like to say generally—followed, and hence some reduction from the amount expended is necessary; this leads us to adopt the rule that *a crop should be charged only for what it actually gets*.—What portion of the fertilizers applied remains an open question; perhaps two-thirds of manufactured manures, and one-half of the barn-yard manure, would sufficiently approximate accuracy for practical purposes.

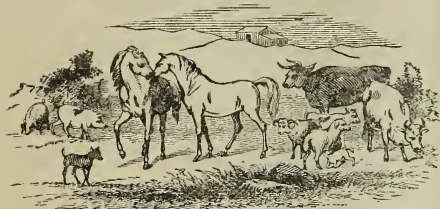
The account would then stand,

Dr.		Cr.	
\$.	Cts.	\$.	Cts.
Plowing, harrowing and all work done,		Total value of whole crop ..	
Seed		Straw and grain	
Interest on land			
Taxes, &c.			
Harvesting and hauling			
Threshing or husking			
Marketing, etc.			
Two-thirds of fertilizers			
One-half barn-yard manure			

I estimate a horse at .75 per day; hands, cash and board; each plow, harrow or cultivator, .25 per day; circumstances will no doubt demand some modifications of these prices and items; the chief object is to charge the crop not one cent more than it receives.

An account thus rigidly kept will show better

Live Stock Register.



HOW LONG SHOULD A MILCH COW REMAIN DRY?

We have always advocated milking as long as possible, and have found by experience in different members of the dairy that those are most profitable that milk the longest. A fair case is a cow we purchased when a few years old, and which we found to give milk, quite plentifully, till up to calving; indeed we were taken by surprise when the first calf was dropped; there had nothing of the kind been suspected. This continued yearly, more milk being drawn from this cow than from any other, though the quantity given during the summer was not greater than that of the rest of the cows—not so large as that of a few; it was during the winter that the advantage was gained. This cow, therefore, was a "winter cow," as well as a summer milker, and gave good fat milk. It need not be said that so far as this was concerned, it was an advantage. As to the keep or condition of the cow, this also was satisfactory. She never was in high flesh, but never run so low as to show a lack of the usual yield of milk. She was fed like the rest, all she wanted to eat of hay with some straw, and (during the winter) a daily allowance of slop, which the rest did not get, supposing they did not need it. This extra feed was necessary to meet the double demand of the lacteal and the placental.

This cow was continued for many years till age unfitted her for the dairy, keeping up yearly the same regular flow of milk. The case is a demonstration of the utility of the kind, and is entirely satisfactory. Other cases approached this with the same uniform success.

Here is a difference in the lifetime of a cow of some thirty or thirty-five months, or four years of milking, in favor of continued flow. Give us a dairy of this kind of cows; let them be choice cows, and no others of equal number can compete with them. As a single cow, of course this is what is wanted. Yet to come in early—at two years—and milk continually till mastication in old age fails; feed well but not crowd, and you have what is the

most profitable cow in a dairy. It is the care and the feed that will accomplish this.

We know it is urged to give a resting spell to milch cows, some contending that three months, others two months, and some still less, is the proper time for rest, thus disagreeing as to the time. We speak what we advocate only from experience.—Let others who have tested the matter give us the facts.—*Ulrica Herald.*

SALT AND CHARCOAL FOR STOCK.—The use of charcoal as well as salt has been highly recommended to farmers, as tending to keep them in good condition, and help their general improvement. Salt acts healthily on the blood. Charcoal strengthens and heals the mucous membrane throughout the alimentary canal, and increases the power of the digestive organs, healing any unhealthy condition existing there. It prevents worms generating in the stomach, etc., it absorbs the putrescent gases, by which worms are generated, and they consequently die. The free use of salt and charcoal will be certain to protect cattle from epidemics, and will counteract the effects of putrescent or septic water.

CARE OF HORSES.—As a rule the curry-comb is used too much, and the brush too little. When a horse is brought into the stable, covered with sweat and mud, he should be rubbed dry with straw. Then, the next morning with a curry-comb, in one hand, and a good brush in the other, he can be thoroughly cleaned—the curry-comb only being used to straighten the hairs ahead of the brush.—The difficulty about getting a good curry-comb arises from the neglect to rub the horse clean with straw before leaving him for the night. Much care should be used in cleaning a horse's legs with a curry-comb, so as not to injure the joints.

HEREFORDS—Although comparatively little known in this country, they are a valuable breed, and their origin dates far back in the history of English cattle. To what extent, concurrent with other breeds, they have improved, it is not easy to say; but that they have received great attention within a century past, and, no doubt, been much improved, is certain from English authorities.

The Herefords of a hundred years ago were deep red—almost brown in color, with mottled faces; now they are usually red, with shades running into light or yellowish red, with white faces, throats, bellies, and sometimes backs, and occasionally a roan and white mixed, and more rarely, an almost clear white, with red ears.—*Allen's Am. Cattle.*

BLIND STAGGERS.—A correspondent at Waynesborough, Burk county, Ga., sends us the following:

As I wish to benefit others as well as receive benefit from their experience, I send you a recipe for blind staggers in hogs that has proved *invariably* successful with me for many years, and in the most *extreme* cases.—Raise the upper lip of the hog, and cut the cord that connects it with upper gum—that is all—simple, but *perfectly effectual.*

The Poultry House.

POULTRY KEEPING.

The interest in poultry is wide spread and on the increase. The magnificent show recently made at the Music Hall in Boston, was a sufficient proof of this. The fact is that, though comparatively small in amount, it is one of the most pleasing and profitable departments of the farm. We are glad, therefore, to see that it has its full share of space in the report of the Secretary of the State Board of Agriculture just issued from the press. From that we take the following :

Statement of Sturtevant Bros., South Framingham.

They say : ' Our flock consisted of about thirty head in March, when the account commences, and varied by purchase and the hatching of chickens from this number to about two hundred and twenty.

About April 12, a flock of nine dark Brahmas was purchased and set apart.

About April 12, a flock of seven Partridge Cochins was purchased and set apart.

About March 24, a flock of six, afterwards increased to nine light Brahmas, was purchased and set apart.

At date, the dark Brahmas had laid 172 eggs, or 21½ per hen.

At date the Partridge Cochins had laid 158 eggs, or 26½ per hen.

At date, the light Brahmas had laid 673 eggs, or about 97 per hen.

No separate account was kept of the amount consumed by those set apart, but an account of the quantity fed out to the whole flock is here given.

March, 4 bushels of corn; April, 2 bushels of corn, 2 bushels of corn meal; May, 6 bushels of corn, 4 bushels of corn meal, 2 bushels of oats; June, 3 bushels of corn, 4 bushels of corn meal, 1 bushel of oats; July, 8 bushels of corn, 8 bushels of corn meal, 4 bushels of oats; August, 8 bushels of corn, 6 bushels of corn meal, 5 bushels of oats.

By this account it appears that 30 adult hens, increased to 55 in April, can be kept, together with their progeny, 165 in number, September 1st, from March 1 to September 1, for 55 bushels of corn and 12 bushels of oats.

Substituting values for the above form, and calling each hen worth \$1, as is customary, and chickens at half price, we have the following :

Dr.—Fifty-five hens at \$1.....	\$55 00
Cost of feed.....	51 00
Total.....	\$106 00
Cr.—Fifty hens, at \$1.....	\$50 00
165 chickens, at 50 cts.....	82 50
Total.....	\$132 50

and the eggs and manure extra. But as this poultry is superior of its kind, it would bring on sale a larger price than is here given, which materially adds to the profit.'—*Ploughman.*

For the Maryland Farmer.

HOW MUCH MILK DOES IT REQUIRE TO MAKE ONE POUND OF BUTTER?

[SEE MARYLAND FARMER FOR JUNE.]

This is a question, the solution of which properly belongs to our agricultural colleges, to which there always ought to be an experimental farm attached. We know that a good many differ with us in this view, but such a college without a farm of that description is pretty much like a wagon without wheels. It may be theoretically demonstrated what can and ought to be done with the wagon, and how it has to be done, but without the wheels it cannot be practically proved how much of the theory is adapted to practice. Although, as we have said, the correct solution of the above question must be left to a series of experiments, still we will, until that time has arrived, make a few remarks sustained by the experience of many years practice.

The principal points which regulate the quality of milk are : 1, the breed of cattle; 2, their age, 3, what kind of food they receive in winter; 4, if they receive oilcake meal or other meal in their drink; 5, if they are milked clean; 6, if they are soiled or pastured in summer; 7, of what kind of grasses their pasture consists; 8, or what material is used for soiling; 9, the climate. These we may consider the principal points which influence the richness of the milk. The facts cited in the above mentioned article prove that a number of dairies in Maine, 45° N. L., obtained one pound of butter from 11¼ quart of milk, as an average. Our experience, under the 38° N. L., has been quite different. In our locality it has taken an average of 16 quarts of milk to make a pound of butter. Our cows were good grades, fed during the winter with six quarts of corn meal, one peck of brewer's grain, and fourteen pounds of hay, per day, given in three meals. In summer they had a rather poor pasture, with some little red clover, but mostly wild grasses, and daily 4 quarts of corn meal per head in two meals, morning and night. It will be seen by this that they received a full feed of cream favouring food, (corn meal,) and still we only obtained the above result. In our opinion the climate exercises the principal influence. The cream may be in the milk, but prevented by unfavorable influences, we are not able to extract it from the milk. In a warm climate the milk has seldom time to form all its cream before the milk turns sour. Also, the process of making butter, even if undertaken in the cool of night, is not performed so successfully, because it is difficult to obtain and sustain the proper temperature. It might be done, but it would require such an outlay in superior dairy buildings, water works, ice house, and ice supply, that only very few would be able to do it. It is another fact, noticed by us in our extensive travels, that there is a certain belt of temperature, where the land is partly surrounded by salt water seas, where the best and most butter is made, all year round, and where the best grasses grow most prolific and of better quality, and continue verdant until late in the fall. For instance, in Europe the only superior butter is made between the 57 and 52 degrees, N. L., although Switzerland, Italy, France, Belgium and Holland produce superior qualities of cheese. Here in the W. L. we may locate this belt between the 47 and 40 degree of N. L.

L. A. HANSEN,

Columbus, Miss., June, 1872.

Grape Culture.

MILDEW IN GRAPE VINES.

The following communication in regard to mildew on grapevines, from Mr. Wm. F. Channing, was read at a recent meeting of the Rhode Island Horticultural Society:

I wish to bring to the notice of the society some very important results in relation to the mildew of the vine, both American and European, obtained recently by Mr. Thomas Taylor, who is conducting the microscopic investigation into the fungoid diseases of plants at the Department of Agriculture.

Mr. Taylor has traced the variety of *erysiphe*, which constitutes the European mildew, through all its stages (*oidium* inclusive) on the European grape vines in the conservatory of the Department, and he has found the ripened conceptacle or fruit on all parts of last year's growth. If a piece of last year's cane is brought into a warm atmosphere, the *erysiphe* begins to develop from the seeds or spores. No matter, therefore, how closely a vine is trimmed, enough wood is left upon it to carry the seeds of the mildew over to another year. As a consequence of this discovery, the stems and branches of all the foreign grape vines in the conservatory of the Department have been washed over this winter with a carbolic preparation.

All our friends who have cold graperies may be interested in trying the same experiment. A solution of sulphuret of lime (as it is called,) or of carbolic soap, would undoubtedly destroy these spores on the wood. I would propose whitewashing for the same purpose. Mr. Taylor suggests that the same precaution would destroy the eggs of thrips on the bark.

Another observation of interest in relation to the European mildew is the following: Mr. Taylor found that mildew on leaves pressed in a dry book rapidly spread and grew. On the suggestion of Mr. Saunders, the experiment of keeping the graperies of the Department very dry for a few days was essayed. This resulted in so rapid a development of the European mildew (*Erysiphe Tuckeri*) that he obtained for the first time, either in Europe or America, the perfectly ripened conceptacles or fruit of that variety. It follows that the European mildew is developed by dry heat, while the American mildew (another fungus) requires moist heat. Our cultivators of cold graperies may take a hint from this.

But Mr. Taylor's observations cover, also, the history of the American mildew, which is chiefly the *botrytis viticola*. On the wood of last year's growth he finds the *mycelium* or cobweb-like branches of this pest capable of resuming active growth when subjected to warmth and moisture. Here, again, whitewashing or solutions of sulphurets or carbolic acid, applied to the wood in winter will destroy the buds of the mildew, which are awaiting only the heat of another summer to spread over the new canes and leaves.

There is also an American variety of *erysiphe* which appears so late on the vines as hardly to affect the fruit. But this may probably injure the buds of the following year. Mr. Taylor has found the conceptacle of this mildew on the wood of American vines, under the same conditions as the European. These, also, can be destroyed by washes applied to the vines in winter.

Horticultural.

POTOMAC FRUIT GROWERS.

This flourishing society held its June session on Tuesday the 4th, which was well attended, and more than usually interesting; C. Gillingham in the chair.

Cherries and Strawberries.

Small fruits being the subject of discussion, the president called the attention of the audience to the fine display of cherries upon the table, stating that by some accident, a collection of strawberries were not exhibited. He also noted a well preserved Nebraska apple, retained from last fall's fair, by Mr. J. L. Smith. It was withered, but showed no signs of decay. This apple was a part of Nebraska's fine contribution to the Richmond Pomological Convention, last September.

Mr. Gillingham exhibited specimens of cherries as follows: Early Richmond, Belle de Choisy, Buttner's Yellow, Empress Eugenie, and two not named. D. O. Munson, Esq., of Arlington, Va., the Early Richmond, Empress Eugenie, and May Duke.

Mr. Munson's cherries were exhibited on the branches as they grew, showing exactly the character and habits of the fruit, which elicited comment, as being a choice method for exhibition and examination.

Mr. Gillingham said that the cherry crop was noticeably affected in his neighborhood by frosts.

An extended and instructive discussion was had, in which Col. S. E. Chamberlain, Mr. Munson, the president, and others, participated, showing that cherry trees do best on high, dry, and gravelly soils; and that strawberries need a more loamy, rich soil. The first rank in excellence, in strawberries, for market, was given to the "Wilson," for profit or general culture. The "Scarlet" and "French" received credit as coming next.

A member spoke of the *raspberry*, and said he thought it was not generally grown because the heat was too great for it; it flourished best in cold climates, and was not sufficiently protected by shade and complete *mulch* here to insure success. Persons were too apt to judge the berry a failure, when sufficient attention was not given it.

We have learned, beyond a question, that all our berry bushes—raspberry, blackberry, currant, &c.—will do very much better if they are liberally *mulched* in the fall, with manure or compost—and then lightly in the spring again.

Agreeably to appointments at the last meeting, friend Gillingham read an instructive paper on the Apple—pointing out its habits, needs and diseases, with instructions in regard to cultivation, &c., giving a list particularly desirable for the amateur, as follows, earliness and excellence in the following order, viz:

Early Strawberry—Summer rose, early and fine flavored; Astrachan, Priner's early harvest, early ripe, primae, Edward's early, Benoni, Townsend and early hagloe, early and subacid.

Early summer kinds—Sweet bough, summer pearmain, Porter and orange sweet, and summer sweet Paradise.

Late summer and fall apples, &c.—The Jersey sweet, bachelor's and maiden's blush, peach, pound sweet, fall pippin, Morgan, smoke-house, Gravenstein, wine, red streak and Northern spy.

For winter—The hollow core (Ortley) Abram, Albarne, Boling's sweet, buff, Belmont, Cuthbert, Smith's cider, cannon pearmain, Cullarga, Couch, fallowater, Harrison, Limbertwig, milan, Meade's keeper, nick-a-jack, Peck's pleasant, Paradise, Pravis red, Rawle's genet, Roman stem, ridge pippin, royal russet, American golden russet, winter blush, winter queen, wine sap, winter cheese, York imperial, York stupe, Hew's crab, Hall's red, and Grimes's golden.

A little strange bug, which no one seemed to know, resembling the rose bug, was sent to the association through the president, which is making great inroads upon the grape-vine, eating leaves and fruit. It was referred to Professor Glover for report.

Notice was given by the secretary that communications, from parties interested, addressed to him, submitting questions pertaining to fruit, by distant members or friends to the association and cause, would receive prompt attention, and be answered through the press.

Though the day was a rainy one, and the present being a busy season, still there was a good attendance, some members coming from a distance of twelve to fifteen miles to be present; all parties in Maryland, Virginia, and the District, are cordially invited to attend these meetings, which regularly take place the first Tuesday of each month at 12 o'clock, noon.

D. S. C.

Ladies Department.

THE MOCKING BIRD.

[ORIGINAL.]

The wonder of the wild wood choir,
The matchless mocking bird,
Like worship chiming from the spire,
Is from the green bough heard;
And answering to his soul of fire,
The forest's heart is stirr'd.

With flutt'ring rapture, all his own,
With whirl, and stoop, and spring,
His soul into his motions thrown,
And quiv'ring in his wing,
And breathing forth in ev'ry tone,
He makes his changes ring.

With all the poets' sympathy,
He catches from the hill;
The vale; the grove; the earth; the sky,
And from the waters still,
All notes that rouse, or terrify,
Charm, sooth, or melt or thrill.

His Coriolanus falcon cry
Careers upon the gale,
His warbled Juliet blue bird sigh,
Enamours all the vale—
And melts into the pitying sky,
His 'Ophelian wood dove wail.

With what a touch of soft delight,
Must the Creating Hand,
Have given this feather'd spirit flight,
And bid his song expand,
Amid the bursting blossoms bright,
O'er all the southern land,
In varied tenderness and power,
With melody to bless,
As with the April sun and shower,
The conscious wilderness,
Long ere the Red man came, his bower,
In that lone wild to dress;
And then, to wake some Indian maid,
The sweet flower of her race,
Some Pocahontas of the shade,
To a celestial grace—
Some Oseola of the glade,
To melt, in his high place.

With what a gush of tender might
Must the Effusing Mind,
Which in dear ties, unknown to sight,
Doth all things living bind,
Inferior to Superior light,
As well as kind to kind,
Have link'd in His connecting love,
(That all embracing chain.)
This peerless Shakespeare of the grove,
With him whose "wood note" strain,
Rising the Avon's stream above,
Fills Nature's vast domain.

Will He not loftier anthems blend
With theirs, as ager throng,
Before and after time shall end,
And the sweet strains prolong,
'Till to the heav'n of heaven ascend,
The swelling tides of song,
(The universal ear athirst,
As roll their torrents on.)
'Till they in floods of glory burst
Around th' Eternal throne,
To Him who fill'd their fountains first,
The God who sits thereon!

Baltimore County, June, 1872.

A CHAT WITH THE LADIES FOR JUNE.

BY PATUXENT PLANTER.

"How the air
Is rich in fragrance! fragrance exquisite
Of new-mown hay; of wild thyme dewy wash'd,
And gales ambrosial, which with cooling breath
Ruffle the stream's pure surface."

When this reaches you, may such words be appropriate to the state of the weather, and may it not find you oppressed with the intense rays of the usual July sun. Your flowers and shrubs, I hope are full of life and healthful beauty. This warm season of the year water well your hanging baskets. Keep Cammelias in the shade and do not let them get too dry. Tie up the Dahlias to strong sticks as they grow, and occasionally water them with liquid manure. Now, look well to the bedding out plants and see they have no weeds nor suffer for moisture. They will begin to show forth all their glories. Petunias are apt to be blown about unless confined by strings tied to sticks and running crosswise the beds. Save seeds and sow the seeds of perennials as soon as they are ripe. It is far better to do so than to wait until it is later. Take up bulbs as fast as the tops fade, lay them in a cool shady room until they are planted the coming autumn. Direct the new growth of climbers and see that it becomes not entangled too closely with the old growth. Keep the walks clean from weeds and grass, or if they are grass walks, see that they be kept well shaven.

In this month much canning and preserving of fruits and vegetables ought to be done for winter use. Some fruits can also be dried and conserved quickly under the influences of the hot sun and air. If you put up cherries, procure the labor-saving and useful "cherry stoner," it is a valuable little, cheap implement in a household. Besides our own fruits, at this season, a very cheap and delicious preserve is the Pine Apple. It takes but little sugar and keeps well. Conserved or well cooked green or ripe gooseberries and Fox grapes make very fine preserves, to be eaten with milk or in pies, or delicious "turn overs," or as some call it, "Roly-Poly"—an old time dessert, but hard to beat by new fangled dishes.

To those ladies who are fond of rearing poultry, or deem it a duty to keep fowls for supplying their tables with delicacies from their own hennery, I would recommend from experience, all things considered, the "Partridge Cochinchina." This breed lately introduced from Cochinchina, is fast recommending itself to poulterers. The hens resemble in color of plumage the partridge hen, hence I suppose the name, while the males have brown breasts with a large shoe or crescentic mark of dark brown; and they are majestic and handsome in appearance. They are of great size; quick growth, and have abundant feathers while chicks; easily reared; bear confinement in a small space well; are healthy, quick and peaceable; hardy and prolific layers in winter; docile sitters and good mothers. Their table qualities are unsurpassed.

A wise man of old has written in substance that to be a true friend, one must gently rebuke faults, when necessary, as well as perform the more agreeable duty of administering praise when deserved. I would not be considered a censor, certainly not fault finder, but in this department of the *Maryland Farmer*—the ladies portion—it is not deemed amiss to suggest that there are some ladies who often do acts of thoughtlessness which amount to a down-right wrong and grief to their courteous neighbor, in a way, that forbids his or her from uttering a complaint, yet he or she feels the injury all the more because the courtesies of society as well as the (to the world) petty trifle of offense would

ANGORA GOATS.—The *Gilroy Advocate* of May 4, says: "Ab. Wharthen & Co., of the Central Market in this city, sheared a two-year-old Angora wether last Wednesday. Its fleece weighed 11 pounds.—The goat is a three-quarters, and was raised by Hon. Jas. P. Sargent. The flesh of the Angora goat is pronounced by experts to be superior in sweetness, tenderness and nutriment to that of the sheep."

make a stern remonstrance seem churlish and unworthy the dignity of high breeding or a generous nature. Nevertheless these small acts, perhaps in most cases proceeding from want of consideration, often turn an otherwise hearty welcome, into a fervent wish that the visitor might never come again, though that prayer is suppressed utterance by the Chesterfieldian laws of polite society. I allude to the habit of *ladies*, particularly, in visiting their friends, without saying even, by your leave, grabbing a flower, or more, and tearing it from the bush with a long stem, often to the detriment of the whole bush by loosening the roots if it should be hard to separate from its parent stem, or destroying the future bloom of a dozen like flowers in embryo on the same stem. All know that most flowers should be cut with a sharp instrument and not pulled, and that to some delicate plants, in a dry season, it is death to pull the flower before its time, unless care be taken to do no injury thereby to the roots of the plant. My words are the expression of those thoughts which occurred to me a short time since, when I sat gazing on a handsome floral display in the small yard of my opposite neighbor, which, with a great display of taste and much cost, he has secured for his pleasure, and the delight of all lovers of flowers who pass, or overlook, his beautiful little parterres. An elegantly dressed lady entered the gate; the house in front and that portion of the side next the flower garden was closed. She strolled around and gathered quite a bouquet, of roses; it mattered but little as they were abundant, except one small white bud, the only offspring of a small, rather delicate little bush of rare merit, late set out and watched with care for its full development by its owner. The little bud clung tenaciously to its parent system, and the lady was not to be thwarted in her desire, so she gave a vigorous pull, and ere she succeeded, the little bush was pulled nearly out of the ground, so that the life of the parent was endangered (in that dry time,) if not sacrificed to the whim of a lady evidently careless of the consequences of her act, because she perhaps never owned a flower and knew not its value or the tenacity with which some plants like loving mothers, hold on to their offspring, dying, rather than have them torn ruthlessly from them. She then selected a few of the choicest of a select lot of blooms from delicate newly hedged out plants, formed them into a bouquet, and walked to the door, rang the bell and entered the dwelling. What therein passed I know not. That she said the flowers were her culling from the premises, I doubt. Did she say so, I feel sure the owner thought, and said to himself, "you had better waited until I offered them; they cost me much, and I desired to enjoy my own property, at least until I had seen its actual value, you are a heartless robber, tho' I acquit you of intentional wrong, as you are ignorant of the true worth of flowers and incapable of appreciating the true value of their beauty." When I lived in the country I had obtained a choice tree Pæony for \$5, (it has been long ago, when they were very scarce and high,) and I came home just in time to see a few guests strolling over the lawn, admiring my flowers and trees, before their departure, when on reaching them I beheld an adoring young mother, in admiration of the vigorous powers displayed by her young hopeful Eddy, of only three years old, who with his father's horsewhip had just finished the victorious demolition of my tree Pæony. She exclaimed "see how strong he is, he has cut to pieces that tall, tough weed," and gallantry made me reply, "he is a hero, for I could not believe he could with that whip destroy a tree pæony so easily," while in my heart and on my lips their burned words that would not have become so fair a presence. Ladies are not careful enough with their

children, or watchful enough over their own acts, when they walk among the flowers and fruits of their friends. I hope this advice will be taken in good part—it is meant in kindness. I am sure every lady owner and loving cultivator of flowers will thank me, whatever the pouting little coquettes may say, deeming their beauty and witching ways will let them do as they please, and I admit they can do what would be unpardonable in children and "ladies of a certain age;" but even these privileged beings have their limits in liberties with other people's flowers.

BEAR AND FORBEAR.

Be careful, ye whose wedded hearts
Are lovingly united;
Be heedful lest an enemy
Steal on you uninvited!
A little wily serpent form,
With graceful, luring poses;
Or, coming in a different guise,
A thorn among the roses!

Be careful, ye whose marriage bells
Now merrily are ringing;
Be heedful of the bitter word,
The answer keen and stinging,
The sharp retort, the angry eye
Its vivid lightning flashing;
The rock on which so many hopes
Are daily, hourly dashing!

"Bear and forbear;" the only way
To tread life's paths together,
Then come, and welcome, shining sun,
Or come dark, cloudy weather—
Two loving hearts dissolved in one;
That cannot live asunder,
Have put Love's golden armor on—
Oh, world, look on and wonder!

For the Maryland Farmer.

NEW PEAR INSECT—SOAP SUDS—MUSEUM.

Recently Professor Thomas Taylor has discovered a small insect on the leaves of pear trees, which it is believed has not been before known. In passing through the pear garden he noticed that the leaves on some of the trees, were discolored slightly, having the appearance of blight or mildew; he picked off some, took them to his desk, and subjected them to inspection under the microscope; under a high magnifying power of about 75 diameters, the insect appeared to be about the size of a kernel of wheat, say, about one-eighth inch thick, and twice that length; of a greenish white color, with sharp jaws or nippers, with which it pierced and tore off the surface of the leaf very smartly—causing the sap to run out, and finally destroying the leaf; it being only about the six-hundredth part of an inch in diameter is, of course, imperceptible to the naked eye—yet enough of them, scattered over the foliage, will be serious, as the leaves examined show.

Professor Taylor is giving it further examination, in order to discover its habits, character and origin; and to determine the remedy or prevention, when a fuller statement will be made. It is a new insect, so far as is known to the entomologists here. It is thought that syringing the foliage on the trees with strong soap suds, or sprinkling on sulphur, will destroy it, and prevent injury; but more is to be learned by examination and future experiments, which will be reported.

Fruit models, preserved birds and insects of all kinds, with full statements in regard to them, prepared and classified by Professor Glover, can be seen in the Museum of the Agricultural Department, together with many other objects of interest to farmers and fruit growers; hence, this is a most important institution, and Congress shows its appreciation by making an additional appropriation for its enlargement. All farmers who can, should visit this agricultural museum for their own benefit. D. S. C.

For the Maryland Farmer.

PLOWING—EXHAUSTION—HARD-PAN.

Simply exhausting, or a "running-down" the soil, is not the only—hardly the worst—evil of constantly plowing and cropping the land, year after year, without rest.

The friction and continual pressure of the plow, has a constant tendency to pack the earth and produce an artificial hard-pan, at the bottom or depth of the accustomed furrow; it is well known that the pressure of the plow is very great on the earth, when making the furrow, from the fact that so much power is required to draw it through, and must necessarily harden the ground under it. Hence, the absolute necessity of frequently plowing several inches deeper than common, to keep the lower strata broken up deeply, in order to allow the moisture to rise up from below, and also to allow the fine roots of plants to run down. This, the bad results of continual plowing and cropping land are two-fold—hardening and exhausting the soil—unless frequent and thorough subsoiling be resorted to. But deep and complete under-draining will also greatly obviate the evils, by rendering the land loose and porous, to considerable depth, so that moisture can rise from below in a warm, dry time, and do much to prevent the injury of drouth, and avoid rapid exhaustion of soil by allowing the plants to draw support from below.

In this connection, too, it will be pertinent to mention another large benefit to be secured by deep-plowing and under-draining, particularly on large tracts of Virginia and Maryland soils; that is—washing and gullyng will be, in a great measure, prevented; as the land will be rendered loose and porous, so as to allow the rain falls more readily and quickly to settle *into* the ground and be absorbed, and not be forced to run off on the surface and wear channels in its passage.

It is with this—management of soils—the same as with every other business operation, performing it in the *right way*, will be most sure to secure benefits and prevent injury. Therefore, thought and judgment—exercise of the mind—and not blindly, unthinkingly, following some old way—is especially advisable and advantageous in farming, equally or above all other callings—it offers a greater scope for thought.

It is a proud and responsible privilege to be the owner and cultivator of land, and the feeder of the people; and also involves a correspondingly sacred accountability, and duty; it is the source of life support, and the basis of prosperity to all others, and this renders it incumbent upon the privileged party to do all in his power, to employ every resource—to make his operations as efficient and bountiful as possible.

D. S. C.

THE TRADE IN FERTILIZERS.

To the Editors of the Maryland Farmer:

Several articles have lately appeared in the public prints relating to the manufacture of commercial fertilizers in your city, which, while they give with approximate correctness the number of tons made, the amounts invested, and the processes of different manufacturers, give no idea of the real value of the articles to the farmer, and do nothing towards counteracting the suspicions engendered by certain wholesale denunciations made about a year since.

As I have been making extended investigations into the manufacture of fertilizers, both North and South, perhaps my conclusions may help some of your readers to a better understanding of the matter.

I confess to having been very strongly influenced by the statements to which I refer. Coming as they did, with apparent frankness from a seemingly disinterested party, although accompanied by chemical theories which I discard, I gave them great weight, and commenced to write a series of articles based upon the supposed facts. While thus engaged I was informed upon good authority that one party to the statements had proven *himself a fraud*, that the statements themselves were exaggerated and unreliable, and that in cases where they approximated to the truth, there had been so great improvements that they were no longer applicable.

Despairing of getting at the truth in any other way, I determined to visit personally each of the manufactories of fertilizers and examine for myself.

In this tour I have now been engaged since the first of May, having already visited a large proportion of the manufacturers, and am happily confirmed in my later convictions as to the improvement in the character of the trade.

Great progress has been made in the intelligence necessary for the successful compounding of fertilizing materials. Almost without exception the manufacturers employ competent chemists at their works to supervise the whole process of manufacture. This is the most important step that has ever been taken towards establishing the business upon a permanent basis. These chemists have within a short time settled among themselves several important questions, which before gave the business a measure of uncertainty.

So long as superphosphates were made by the original process of Mr. Coe,* little chemical knowledge was necessary, but bones became scarce, and if one hundred pounds of bone were put into each ton of superphosphates now made in this country, it would exhaust the supply. Some substance must be found to take its place. The discovery of the phosphatic guano, of South Carolina, the islands of Navassa, Sombrero and others, opened this supply. But the working of these mineral phosphates requires much more chemical skill than the working of bones, and it was in the early attempts to manufacture from these deposits that the mistakes and failures occurred which have cast a shadow of suspicion over the business. The permanent employment of chemists at the manufactories makes such failures in future highly improbable. All the manufacturers are agreed that the standard has from

*Mr. Andrew Coe established the manufacture of superphosphates in this country in 1845, making them wholly of bones and Peruvian guano, after treating the bones with sulphuric acid. He established the value of superphosphates, and his name is still used as a guarantee of good quality.

some cause advanced, and is still advancing. None of them, so far as I have observed, now make a superphosphate wholly from bones, (which are North, \$30 per ton unground, and \$35 as bone meal,) but many of them still use a percentage of bone varying from 100 to 300 lbs. to the ton.

A large proportion of the superphosphates, however, are now made wholly with the Phosphatic Guano as a base, which, when very finely ground and properly treated, makes a fertilizer nearly if not quite equal to those containing a portion of bone.

It will be seen therefore that there is now an unlimited supply of phosphatic material, and there is no longer any such temptation to adulterate as there was when bones only were used. In addition to this incidental guarantee of purity, the men engaged in the manufacture so far as I have met them are, with one or two minor exceptions, gentlemen of high character and business standing, who have invested thousands of dollars in this business, and understand that it will not pay to ruin their business by making any inferior article.

Believing thoroughly as I do that there is no longer any successful farming without the liberal use of commercial fertilizers, I submit the above considerations to the farmers and planters of Maryland and Virginia in order to restore their somewhat broken confidence in the fertilizer trade.

There are some things lacking on the part of the farmers themselves which, it desired, I will make the subject of another article.

CHAS W. DICKERMAN.

ADVERTISEMENTS.

If such persons as have stock, agricultural implements and fertilizers, &c., for sale, only knew what they lose by not advertising, they would surely do so. Daily we receive letters making enquiries where such and such articles are to be found. Instead of advertising what they want, they put us to the trouble of answering their letters with a negative reply, *i. e.*, "we do not know." Farmers, make known your wants, and let your fellow farmers know that you have for sale, a fine horse, calf, sheep, fowl, pig, implement, fertilizer, or superior seed of any sort, by the insertion in the *Maryland Farmer* of a few lines descriptive of the thing for sale, or what you desire to buy, and we feel confident you will reap a reward you little dream of, and we say this on the experience of more than one of those whose names are most often seen in our advertising columns. We have on hand enquiries for stock, poultry, seeds, farms, &c. It is of course not expected we should insert in our pages these queries as *free* advertisements.

STATE FAIRS 1872.

Iowa—Cedar Rapids—Sept. 9, 10, 11, 12, 13.
New York—Elmira—Sept. 16, 4 days.
Kansas—Kansas City—Sept. 23d to 28th.
Indiana—Indianapolis—Sept. 30th.
Pennsylvania—Erie—Sept. 17, 18, 19, 20.
Maryland—Baltimore—Oct. 8, 4 days.
Virginia—Richmond—Oct. 26, 4 days.

LAND SALES IN MARYLAND.

Baltimore County.

Pleasant Hunter and J. M. Street, trustees, sold at private sale two tracts of the Wilson land, containing 227 acres, to Mr. Kolter, of York co., Pa., for \$2,000. This property is situated near Hunter's Switch, and is improved by a comfortable tenant house. On the 10th instant, at court house door, Herman Stump, Jr., trustee, sold thirty acres of land, the property of Alexander P. Jones, for \$500; E. H. Richardson, purchaser.

Howard County.

Mr. John M. Wilhelm sold his farm of 105 acres, located on the old Frederick road, and within three-eighths of a mile of the Frederick pike at the 24th mile stone, for Mr. James Caines, of England, for \$3,890, cash, improved by a comfortable and neat dwelling and outbuildings.

Kent County.

The farm of Mr. M. S. Carman, near Sassafas, has been sold to Dr. John W. Collins, of Massachusetts—price \$13,015.

S. R. Clayland has sold his farm on South East creek to Rev. J. B. Merritt, formerly of Chestertown, for \$6,500.—This farm contains 100 acres, and is highly improved.

Harford County.

B. F. Minnick sold the farm of James Curtin, containing 96 acres, situated near Little Creek, to Major Abraham Rutledge, for \$1,500. The property is improved by a comfortable stone dwelling and the usual outbuildings.

Talbot County.

Wm. K. Rathell, auctioneer, sold at trustee's sale the farm known as Cedar Grove, on Dover road, belonging to Wm. H. Arringdale, containing 170 acres, to the Building Association, at \$24 per acre, \$4,500. The farm called "Grubby Neck," near the Dover road, belonging to J. R. Plater, containing 169 acres, to John H. Lowe, at \$17 per acre, \$2,873.

Loami Farmers' Club.—This club meets at Loami, Sangamon county, Illinois, and is in a flourishing condition, and we make this public acknowledgment for the honor of enrolling us among its honorary members. The following is a list of the officers for 1872: *President*, A. M. Browning; *Vice-President*, J. S. Short; *Cor. Secretary*, Isaac Colburn; *Recording Secretary*, A. E. Meacham; *Treasurer*, Henry King; *Librarian*, J. C. Cochran.

Trimming Osage Orange Hedges.

The editor of the *Germantown Telegraph*, who has often given his opinion on osage hedges, in submitting several plans for trimming, says:

We have paid some attention to this subject the past couple of years, and are disposed to think that a much better plan than any of these is to let the young plants grow just as they like for two or three years, and then *cut them back to an inch or so from the ground* during the winter or spring. Then from the stout root-stock a large quantity of vigorous sprouts appear, which would grow six feet in one season if permitted, but which can be mowed off into shape while young and succulent with a scythe or grass-hook fastened to a pole. This will make a thick hedge as no other can, besides having the merit of taking less labor than any.

ALSIKE CLOVER, says an English journal, is inexhaustible in its powers of production, as is proved by the wonderfully curious formation of the plant. From its single crown innumerable heads are constantly being produced all through the season, and tilting out laterally over the ground. It is a plant of very hardy nature, as is proved by the fact that it bears transplanting. It is best adapted to low, moist lands.

Our Agricultural Calendar.

FARM WORK FOR AUGUST.

The fine rains in the latter part of June were propitious to the growth of corn and planting of tobacco, and the weather not being unfavorable up to the present writing, (July 10th,) we may calculate upon a good crop of each. Should it continue favorable this month, our farmers and planters will, we hope, have ample cause for mutual congratulations upon a noble reward for their labors and expenditures.

Corn

Has been laid by, and requires no more attention until it has matured, unless it be that the farmer has time to go over it with hand hoes and cut off the grass or any weeds which are making too much headway, so as to keep the land in a clean state for sowing grain. Any late corn should be treated with two bushels of plaster per acre broadcast.

Tobacco.

This crop was much delayed in being planted, for want of rain, and the destruction of the cut-worm which has been unusually troublesome this year. Those who planted early and got it to stand well, will have some ready for housing this month. It should be cut when the upper leaves show a yellowish tint, and have made a full growth. As the weather is warm, tobacco should be cut only as fast as it can be put on the sticks, as it will in a few moments wilt sufficiently for the purpose—Handle carefully; if large, ten plants on a five-foot stick are enough; be careful not to get it burned by exposure too long to the sun. Let it be sent to the house as soon as possible, and there hung up. Carry light loads of it, else it may heat and be injured greatly. *Top low*—Too many planters make the great mistake of suffering the crop when growing fast to run up too high before topping, under the idea that they will get more pounds. This is not true. Sixteen leaves will give more pounds if the stalk had been topped before blossoming than 24 leaves will if the plant is left to blossom out. When topped before the “button” is fully developed, (as it should be, even if the plant has not over eight or ten leaves,) the top leaves will be as long and broad as any of the others, and be of as bright a color when cured. As we advised last month, we do now in regard to worms, kill, kill, unceasingly, until they be all destroyed. It pays well in a good crop to hire hands for this work especially, in sufficient numbers to destroy these worms before they get large. Turkeys are of great use, and pay well for their first cost. We know a capital farmer, Mr. A. A. Hall, of Anne Arundel county, who always

buys a large lot of turkeys early, and hires a woman and two or three small boys or girls to do nothing else than attend the turkeys and worm the tobacco. While driving the turkeys, and when the turkeys are tired and rest in the middle of the day, say from nine to four o'clock, these hands go through the tobacco, turn up the leaves with small sticks, and destroy all the eggs they see on the plants. The fowls are well fed on corn and other food, and when the season is over, say four months, the hands are dismissed, and the turkeys are sold as soon after as they obtain a full growth. This turkey business costs about \$50—that is one woman and three boys or girls, at an average of \$3 each

For four months would be.....	\$48.00
And a hundred turkeys	75.00
The food for all say	77.00

Cr.	\$200 00
100 turkeys at \$1.50	150.00

Balance due	\$50.00
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Thus his crop is kept clean of worms, as has been the case for years past, at a cost of only \$50, by which he has saved in weight and extra price of his crop ten times that sum, and his regular force are employed in other work, except occasionally they go in as auxiliary forces if the enemy seems to gain in numbers or increase their energies. In this number will be seen an able paper from Dr. Mackall on the natural history of the tobacco worm. He is an educated and learned naturalist, and gives many interesting facts concerning this enemy to the tobacco, which we commend to our readers for perusal. We hope the Doctor will give us his views how this worm can be effectually destroyed. We have heretofore expressed our views, and recommended the use of cobalt—destroying the horn-blower—and the killing the worms in the chrysalis state early in spring, by digging around the tobacco houses, under the sills, or plowing up last year's tobacco fields in the winter time.

Rye.

Rye and clover may now be sown among the corn, at the last working of late corn, or after the corn is past being injured by the working. August sown rye we have always found to do well, except in a few instances. If the clover takes well it gains a year in growth, and yields a fine pasture crop next year after the rye is taken off, at a season (this and next month,) when pastures are failing.

Timothy Meadows.

Any one who intends sowing timothy alone for pure hay ought to prepare now the ground selected, manure it well, use some fertilizer that is rich in phosphates, in the last harrowing, then just before or after a rain, when the land is in proper state sow two gallons of timothy seed per acre, brush it in and roll down nicely. Where early potatoes or

corn had been grown, is a good place for this operation. The earlier that timothy is sown the better, for it will, if sown now, give a fair crop next year on well prepared, rich land, and yield more money per acre than a crop of wheat. Good clean timothy hay is now selling by the single ton at \$45 to \$50 per ton—and the probability is that it will be much higher next year, owing to the dry spring of this. A correspondent informs us that he prepared a large field some years ago, fertilized it highly as if for wheat, when wheat was \$2 to \$2 50 per bushel, but it was an uncertain crop—as it is now, by the way—and although he sowed it as late as October the 10th, he cut nearly two tons per acre the next year, and it brought him on the farm after being baled, \$60 per acre, when if he had sown wheat it would not have more than paid expenses, if that, owing to high wages for labor, and failure of the wheat crop that year. Too little attention is paid to the growing of grasses adapted to the making of hay. Those convenient to market or near railroads can make no crop that pays better, all things considered.—The reasons for this assertion, we think, are patent to every farmer who reflects and sums up the cost of production of the several farm crops. On all grass lands, or such as are best adapted to grass, timothy outstrips all other crops in nett value.

Fall Potatoes.

If these have not been given the last working, do so at once, leaving a broad flat hill about them.—Keep the weeds down, by hand and hoe weeding
Fallow for all the Fall Crops.

Turnips.

One or one and a half pounds of seed is sufficient per acre on well prepared ground. Sow any time before the 20th. When the plants come up dust them often, until they get into the rough leaf, with a mixture of equal parts plaster or fine lime, ashes, and salt, with a peck of soot; one bushel of the mixture per acre at each dressing. As soon as the plants begin to *bottle*, pass a harrow over to thin them and kill the weeds, then in a few days let careful hands with hoes weed and thin; in a week or ten days repeat the same, and if it be growing weather the crop will require no more work. They should be thinned to six inches apart. Let us advise you to sow a few acres of your best corn land with turnips, to be fed off where they grow—cultivate the seed in; they will be fine for your fattening sheep this autumn, or ewes and lambs that come early.

Granaries.

These should be thoroughly cleaned before wheat is put in them.

Young Clover.

Give the clover of this spring's sowing a dressing of plaster and salt, say a bushel of each to the acre.

Threshing Grain.

This month is a comparatively leisure one for preparing your grain crops for market, and securing against all loss, by having it ready to be shipped at any moment you feel the state of the market justifies your disposing of it.

Briars and Weeds.

This is the best time to radicate briars and weeds and small bushes; go over the fields, glean all the bushes, briars, weeds and tussocks, dig up the turf in the fence corners, if briary or weedy; gather wood's earth, ditch banks, and if you have boggy places get out what you can of the mud, and cart the whole into your barn-yard, first put a layer of the fresh cut gleanings from the fields one or two feet deep, then a covering of rich earth, leaves, muck, old straw, corn stalks, then more of the gleanings, and so on till the whole be brought in; all the while, cattle, horses and hogs will be trampling over it, and all the manure made in the meantime scattered over the yard, with occasional heavy dressings of plaster, ashes, salt, and any fertilizer that the farm affords, such as contents of kitchen sink, slop bucket, and bones, and any and everything which can be conducive to the decomposition of these substances. If you have to haul too far this collection of weeds, &c., to your pig-pens and barn-yards, and you have gauls or knolls in your next year's pasture field, haul it on them and spread thick: these places are the best spots to scatter all the straw and chaff you have left over winter's feeding.

Hogs.

If you have hogs running in your pastures, now is the time, when the grass is low and heat oppressive, to feed generously once or twice a day with corn, wheat and oat screenings; with bran, shorts, rotten or fallen apples, and other fruits, jointly or separately made, by boiling, into a mush or even a swill. It costs something, and it causes some labor and trouble, but all will be well repaid in the quantity that before Christmas will go in the lard tubs and the pork barrels. It is perfect nonsense to raise pork on the old plan if you wish to raise it under 12 or 15 cents per pound. If you follow that old plan, which was turning out shoats at "killing time," and starving them all winter until clover comes, and then say, "root hog or die," until with dogs and niggers you hunt them down and place them in the pen for fattening, after they have worried you all the year as outlaws, breaking in the fields of corn or other grain at night, and next day run almost to death and torn by dogs, until they escape through their hole in the fence, and a man or more has lost half a day to drive them out and stop the hole, for the same thing to be repeated the next day—you will have pork at a cost far beyond

what you can buy it in market. But if you get a good breed, keep the hogs dry and warm in winter, give good pasture in summer, plenty of water and food all the time, with rotten wood, ashes, salt and sulphur, you can raise pork costing not half what you would have to pay for it if you chose to sell. The hog is naturally lazy, and if well fed with food he will not wander far from the swill tub or food trough, like the poor lazy drunkard he will stick by the tavern that gives him his meat and drink in the largest quantity for the least exertion on his part. But stop his meat and drink and no idle vagabond or ruined rone will turn marauding rover or sneak thief, bold highwayman or chicken stealer quicker than the hog, whether he be high bred or common stock. By the way, the hog in many respects resembles some of the noble (?) species of man. We should then have a more *brotherly* regard for him upon the Sumnerian Darwinian principles!

Orchards.

If you have not done it before, it is not too late to wash your trees with soft soap and salt and ashes, as often prescribed before. Gather the fruit of all kinds as it falls or ripens. Sell all you do not require for home consumption, and if you cannot sell, be sure to feed it to the hogs. Let none decay on the trees or ground. Forward apples may be made into cider, and if sold as soon as made it is well, for it will not be cider long, but it will make good vinegar. Yet if you have hogs, it is best to give them every one not consumed in the family or not sold. Many small green and defective apples, peaches, etc., will now fall from the trees; be ye sure to gather them and feed them raw or cooked to hogs or cows. Cooked fruits are best, particularly when mixed with meal, bran, etc. Destroy as far as possible all caterpillars and other insects attacking either the fruit or the trees.

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Asparagus.—The beds of asparagus should be weeded and worked up and a coating of salt given.

Celery.—Set out plants for late crop. Earth up the early planted when dry and the ground dug.—Water when they seem to want it.

Cauliflower and Cabbage.—Work both often with some earth thrown at each hoeing toward the plants to raise gradually broad flat hills. In dry weather water copiously.

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Herbs—Medicinal, Culinary and all sorts.—Gather these, dry under shade; when dried, put in paper bags for use. Strip the leaves from the stalks of sage before being dried; it will save the housewife much trouble at sausage-making time.

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Late Cabbage may yet be planted on a good season, on prime land, well fertilized and after being planted worked thoroughly and often. Then, only then, will you reasonably expect a fine head of this esculent to grace your table, or be fit for market, planted at this late season; but if the above conditions be complied with and the season suits, you may rest assured you will have a tender, luscious dish on your table of the brassica order.

Spinach.—This vegetable, so delicate in flavor, so wholesome, and one of our favorites, if properly cooked, may now be sown in small quantities on a rich spot, and after being sown, rolled or well-tramped. But it is well now, while cleaning the garden up, to select a warm spot that is sheltered, and make it very rich and pulverized, so that it will be ready to be sown in spinach the last of the month, for winter use. It is so delightful to have jowl and spinach the first of March. They seem to come connubially together like midling and sprouts do later, or still later ham and lettuce. The humblest of America's sons can, if he is thrifty and chooses to do so, enjoy either or all these dishes, which the gourmand Lucullus, with all his wealth and epicurean propensities never enjoyed and could not have had, if he had desired to do so. Then why do we grumble about "nothing to eat," when these luxuries are to be had, if we are provident and industrious?

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OUR VIRGINIA TRIP.

Kinsale a small village, perched like an eagle's nest, on a steep bluff that hangs as it were over a pretty, still stream or small bay that is an arm of the Potomac. This little harbor is filled with the finest fish, especially the *sheepshead*, when in season, and crabs and the fattest of oysters. These several delicacies may be bought in quantities at low prices, and to be had indeed almost for asking. It is strange that as a boat touches here on Sunday for Washington and on Wednesday evening for Baltimore, reaching the latter city on the next morning early, that a large business is not done in fish and shell-fish line. We bought superior soft crabs for 25 cts. per dozen, and on reaching Baltimore found they were selling, of like quantity at \$2 00 per dozen. The people did not seem either lazy or over-wealthy, yet none made the sale of these lucrative articles a business. Persons visiting this place can spend a few days pleasantly at a neatly kept boarding house, and enjoy, free of cost, all the pleasures of boating, and fishing and bathing, and eating the luxuries fresh from the water.

We left this place on board the staunch old boat *Columbia*, now the oldest steamer that leaves Baltimore wharves. She is commanded by Capt. James Harper, whose reputation as a safe, skillful cautious commander, and courteous gentleman is wide spread. The fare was unexceptionably excellent. All the officers and attendants were polite and attentive to the crowd of lady and gentlemen passengers; particularly the obliging and accomplished young clerk, Mr. Samuel Tyler, who is popular with all, especially so with the ladies, with whom he seems to be a favorite.

On our way, we stopped at Piney Point, Maryland, a pleasant summer retreat; and then we entered Britain's Bay, and landed at Gough's wharf, some of our most agreeable passengers, among whom was the fascinating and accomplished Mrs. F. At this place we saw a huge pile of lime, giving some evidence of progress in improving the soils of St. Mary's. We saw the famed Pau-Pau Spring, and caught a glimpse of the large and valuable estates of Col. Forbes, Messrs. Neall and Harris and others. Next we entered the beautiful *Wicomico* river dividing Charles from St. Mary's county, touching at Lancaster's on one side and Plowden's wharf on the other. At the latter place there was a crowd of well dressed colored people, male and female, who seemed to be enjoying themselves hugely.

Here, is the estate, with its fine mansion on the hill in the distance, of the late Col. Plowden, whose genial qualities, generous hospitalities and solid worth, made him so many warm friends. At one time this

was a great fruit and vegetable market farm, producing immense quantities of melons, &c., but finding transportation difficult to be obtained, for such quantities of fruits, the Col. established distilleries and converted into liquors, the fruit that otherwise would have been wasted. He obtained really fine brandy from watermelons—good judges pronounced it capital. And why should not this noble and delicious fruit yield a good article of drink, if *sawdust* can be made to yield, in considerable quantity, a fine brandy, as is asserted, has recently been done?

Soon we reached *Pope's Creek*, the terminus in Charles county of the Baltimore and Potomac Railroad, which is destined to revolutionize Prince George's and Charles, by largely increasing their material wealth; bringing to each, capital and enterprise; stirring up the sleeping energies of their peoples and creating a new, more energetic and remunerative system of agriculture. The whole track from Baltimore to Pope's Creek is now laid substantially, and only awaits ballasting for trains to run regularly.

On the opposite side of the broad and noble river Potomac, we passed some splendid residences in the different counties of Virginia, among which we may mention "*Chatterton*," and the fine estate of *Dr. Stewart*, who has erected a superior wharf at Matompin's Point, King George county, Va.,—while here, the sun set gloriously, and then with a fine breeze, and a starry night, a jolly company, and a captain full of anecdote and entertaining history of places and people of note as the scenes on either side of the river called them forth, we enjoyed ourselves greatly, until we reached the wharf at the National Capital, through which city we rapidly passed to the more agreeable, venerable and classic Georgetown.

Our observations during our journeyings have painfully impressed us with the fact that, saving few exceptions, Agriculture is at a low ebb in Virginia and lower Maryland. There are many excuses for this, we readily admit, yet much more progress can be made than has been. The owners and tenants of these naturally fertile and easily renovated lands, ought to read agricultural books and papers so as to become enlightened in regard to what is going on in the outside world. They want enterprise sadly; they want an infusion of a new element in their population; by which industrious habits will be renewed, improved systems of culture introduced and a change from the old slow course to the new and fast, so as to keep pace with or at least in sight of the progressive march that is being made in all the industrial employments of the day, especially in those departments connected with or relating to agricultural labor-saving improvements.

For the Maryland Farmer.

THE INJUSTICE OF THE EXISTING SYSTEM OF FARM LEASES IN SCOTLAND, AND THE DISCOURAGING INSECURITY OF THE TENANT.

I find in a late issue of the "*Scotsman*," a weekly journal of the highest respectability, published at Edinburgh, an account of the refusal of a landlord to renew the lease of a tenant, although he is acknowledged by all who know him to be one of the best, if not the best farmer in the country, and one of the most intelligent and liberal improvers in his county. This model tenant is Mr. George Hope, of East Lothian, who succeeds his father and grandfather, who were tenants on the same farm, known as "Fenton Barns," for a period of eighty years.

It appears that Mr. Hope's lease expired, and was renewed in 1852 at an increase of 15 per cent. over the previous rental. He had tile drained at his own expense at a cost of over £2,500, thereby reclaiming from a worthless waste about one fourth of the area of the farm, and so improving it that it has for years contributed to the "rent roll" of the proprietor.

Within the last seven years Mr. H. has added greatly to the value of the farm by removing all obstructions to tillage, heavy manuring, and the introduction of steam tillage.

For many years his expenditure, beyond the resources of the farm, for manures and food for stock, has been equal to two years rental, being from £2,200 to £2,500 a year, and for some years past his expenses for labor have been doubled.

For forty years Mr. Hope has been one of the "managing committee" of the East Lothian Agricultural Society; he has also served as a director of Highland Agricultural Society, and was the first chairman of the Scottish Chamber of Agriculture; besides holding numerous other positions of distinction; in short, he is such a farmer and gentleman as every agricultural community is and justly should be proud of, and strongly desire to retain among them.

But, unfortunately for the agricultural district in which he has so long resided, and in which he was the model farmer, and his much sought counsel was so safe a guide, it is not to be permitted any longer that such social and business relations should exist between Mr. H. and his neighbors. And why? Why, simply because his landlord has decided not to renew his lease, which soon expires.

If such a fate and such treatment awaits such a tenant, at the hand of the autocratic proprietor of landed estates, what encouragement has the tenant to do more than they generally do, barely to secure a subsistence for themselves and family, and no more than they are obliged to do for the landlord?

In this case it appears that Mr. Hope had made a statement, which was published in the journal of the Royal Agricultural Society, relative to the frequent change of tenants in East Lothian. For the expression of this truth, Mr. Hope's landlord, one Nesbit Hamilton, through his factor, immediately notified Mr. H. that his lease would not be renewed.

It would appear from this that it is a dangerous thing for an East Lothian tenant ever to express a patent truth, and one universally established, for the laws there permit the landlord to seize and appropriate the products of the intelligent labor of a long life of his tenant spent in improving his estate, as completely as if it had been the product of his own capital, industry and intelligence.

It appears that Mr. Hope is an intelligent "Liberalist," and he must be removed and put down, and the local laws provide a means by which this can be effected, which is at once availed of.

The editor of the "*Scotsman*," in commenting on the injustice of this case, and the oppression of the tenant, asks: "If this had occurred in Ireland what would now be the legal remedy awarded by the courts of law to the tenant?" He adds: "He has every claim which long and undisputed possession can confer; his intelligence, his industry and his capital have been unceasingly employed in enriching his landlord's property, while drawing from it the means of engaging well paid and remunerative labor, and on every ground he would have established for himself the strongest and most substantial interest in the soil that the Irish Land Act embraces. He could claim payment for disturbances, for beneficial interest, for draining and reclamation, for unexhausted improvements."

"In Ireland the law recognizes these as the legal right of the tenant if their existence is in any degree discoverable."

In the prosecution of my profession in various rural districts in this, my native country, I have had ample opportunity to observe the existing relations of landlord and tenant here, and the effects of leasing land.

The tenantry are generally men of very little means, and many of them are unwilling to perform the amount of labor personally that would be required by a progressive, thrifty farmer, in case they were to take a situation as a farm laborer; hence they prefer to lease at a low rent a poor worn out farm, (the character of a majority of farms leased here,) so that they may "be their own masters," and "work when they please," which, unfortunately for both landlord and tenant, is but a small portion of the time, hence the effect is to cultivate idle, shiftless habits, and many of them change annually, constantly in pursuit of a home where they can make more money with, if possible, less labor.

Under our laws the yearly tenant, who is generally allowed to pay the rent at the close of the year, cannot be ejected until his lease expires, by which time he generally has a large portion of what he has obtained from the land in his pocket, whence it is not easy to extract it.

I have observed that the result of leasing land on shares is also generally very unsatisfactory to both landlord and tenant, and all the land in the country that has been under this system a few years is rapidly deteriorating in value.

Such a tenant farmer as Mr. Hope is stated to be is unheard of in this country, in fact, few farmers here owning the land they occupy, farm as successfully as he does, or have the means of so doing.

The injustice of Mr. Hamilton's course in this particular case will no doubt result in the repeal of the law that permitted it, and the passage of one affording the tenant due protection.

LANDSCAPE GARDENER.

A VISIT TO BALTIMORE.

To the Editors of the Maryland Farmer:

During my stay in Baltimore, in May, I visited the many very interesting public places; besides I accepted a courteous invitation from Col. Mills to accompany the Mayor and a committee of the City Council in an inspection trip down the harbor, to the sea-wall, where the deposits taken by the mud-machines from the basin and the mouth of Jones' Falls, are emptied. This sea-wall is below the Marine Hospital. When I saw the rich contents of the scows lifted by machinery and rapidly emptied over the wall, I grieved to think what a pity so much rich compost could not be utilized, and was lost to the agriculturist, after having been collected at so much cost. It is mostly the rich residuum or solid matter from the sewers and Jones' Falls, and no doubt of much value, could it be dried and prepared, so as to be used by the farmers. It is strange the city has not tried to utilize it that it might pay at least a part of the expense of deepening and cleaning the basin and harbor. I had an opportunity of inspecting the great wharfs, sheds, warehouses and elevator of the Baltimore and Ohio R. R. Co. This company, finding they want more room, is applying for the right to extend the Port Warden's line about four hundred feet, so they can build two more elevators. The day we were there over a hundred car loads of grain from the West had been put in different bins by the elevator, and a huge ship had in a few hours been loaded with grain by this wonderful machinery. All this will add to the greatness of Baltimore, but depress the price of grain in this State and the border States, unless our people enrich their lands so as to rival in product per acre

the fresh soils of the far West, otherwise they cannot compete with the shippers of Western grain in our market. The facilities for transportation of grain from the West, which this great road offers, enables the corn grower there to undersell the corn grower here, because it costs less to produce a given quantity there than here. Corn can no longer be grown here as a specialty. Tobacco is the only *special* crop which can be produced in Maryland with any hope of profit.

During my stay I had the pleasure of visiting the palatial *Rus in urbe* residence of E. Whitman, Esq., so well known as the head of Whitman & Sons' large Agricultural Implement, Seed and Fertilizer Establishment in this city. The Whitman place is quite a farm, lying just out of the northwestern city limits on Madison and Boundary Avenues, leading to Druid Hill Park. His grounds are tastefully and elegantly laid out in keeping with the extended limits. Notwithstanding the excessive drought, the florescence of choice roses, vines and shrubs and smaller flowers was superb. One feature in the adornment of the lawn I particularly admired was the number, variety and rarity of the evergreens—is it true we love evergreens the more we grow older?—the *Wistaria* festooned the lofty verandah, heavily laden with its sweet clusters of purple flowers. The appointments of the house are in keeping with its elegant exterior. A portion of the ground is devoted to vegetables and all the finest varieties of fruits. I was shown his poultry yard also, where I saw some very superior Light Brahmas and Buff Cochins. The Brahma hens were particularly fine. His colonies of bees seemed to be doing well. It was indeed refreshing after leaving the heated town to sit in the porch, look over the city, hear its busy hum, and revel in country air laden with the perfume from the wealth of flowers which brightened the scene with their blended brilliant colors.

After nearly a day's enjoyment of that real, old time hospitality which makes the stranger feel at home, which was enhanced by the presence of the ladies of the family and their agreeable conversation, I left with the reflection uppermost on my mind that business talent, industry, unswerving attention to business, and strict integrity, will surely meet a full reward. Ezra Whitman is an exemplary for any young man to imitate, with the assured hope, that however poor he may be, his efforts will be crowned with like success before he reaches the evening of life. Our young men should remember and act upon the words of John G. Saxe:

"That *pluck* is more than skill;
And few are the ends beyond the reach
Of a strong, untiring will."

P. G.

For the Maryland Farmer.

HORACE GREELEY AND DEEP FLOWING.

In the columns of your esteemed cotemporary for May occur the following remarks by Horace Greeley in speaking of the lands of Virginia :

"The lands which seem to have been exhausted have never yet been plowed to a greater depth than six inches : usually but four to five inches."

Now follows Mr. Greeley's recipe for renovation :

"Turn these up in the fall to a depth of twelve inches, then subsoil them six inches deeper, and a large portion of them would grow fair corn next season, even without manure : In short, so far from having exhausted Virginia, her cultivators have hardly dug down to her."

It is the province of agricultural literature to teach correct principles, not only that the masses may learn those things which will be useful to them, but also *unlearn* those things which may be injurious to them ; in this spirit I desire to modify the above remarks that your readers may not be among those who will regret following the directions above given for the improvement of land.

Plow deep, is a precept of scientific agriculture, qualified by the caution, but do so gradually ; first using the subsoil plow to open the substratum of land, without bringing any portion thereof to the surface.

A disregard of the *modification* of the direction has, perhaps, disgusted more farmers with book farming, than any other one thing taught in our agricultural literature.

With the exception of bottom lands which have received the wash of hill sides or the decomposition of vegetable matter, for ages—like the river bottoms and Western prairies—the soil of our country varies from three to six inches in depth : take the forest land which has never been tilled within the memory of man and which has received and decomposed the vegetable accumulations of ages, and the soil will usually be found no deeper than six inches : under this soil, which contains all the elements of plant food in abundance, will be found the *subsoil*, sometimes of clay, sometimes of sand, which if cultivated, supposing the land to have been cleared and the soil taken away, could only be done at a loss to the person so working. Clay will *not* produce "fair" crops ; sand will *not* produce "good" crops, and if the six inches of soil have been *exhausted*—that is, as farmers understand the term : so much impoverished as no longer to yield profitable returns for culture : as chemists understand it, only unable by *natural* decomposition to meet the demands of culture—if the soil has been exhausted and the sub-soil is clay or sand, plowing twelve inches deep and sub-soiling six inches deeper will not in my judgment, and with fifty years experience North, South, East and West to sustain it, renovate

the land, and as an offset to the apparent approbation of your able cotemporary, of Mr. Greeley's remarks, I desire to say to your readers who design plowing deep to renovate their land, beware ; it is a rock upon which many have split with an abhorrence for agricultural literature no time can remove, and the practice should be extensively adopted only after careful and repeated experiments have demonstrated its excellence.

Much as farmers sometimes depreciate the value of agricultural chemistry, many would have found it judicious economy to subject their sub-soil to a chemist before attempting to raise crops upon it.

Fertility of soil is simply a proper admixture, in a proper condition, of humus, super-phosphate of lime, ammonia, lime and potash, and without them there can be no successful cultivation, even if the ground cultivated *is* the sub-soil, and a mere mechanical calculation of the amount of these articles removed from the soil in a *remunerative* crop will demonstrate that the quantity of each must be considerable.

Mr. Greeley further says :

"With no other fertilizer than \$1 worth of gypsum per acre, backing such plowing as we have recommended, we are confident half the arable acres of Virginia would produce a good crop of small grain followed by clover."

That land can be renovated by clover and gypsum alone—contrary as it may appear to the mineral theory of renovation—has been demonstrated ; but can it be done *profitably* in that manner ?

Is the plan practicable for the thousands of individuals who would expect to pay their hands, feed their families and stock, and meet current expenses from their sales, if they undertook to work such land at all ? I think not ; and in the latter case, unless operations are conducted upon an exceedingly limited area, those who make the effort will be only so many victims more to hang their withered laurels on that delightful spot "where the woodbine twineth," from which extremity may your readers be saved.

I submit these views with all deference to the able author of the remarks criticised, and your distinguished cotemporary who published them : we want the truth however upon all subjects, and if my views can be modified by any person who has actually taken *exhausted* land and, by plowing twelve inches deep and sub-soiling six inches deeper, has raised "fair corn the next season, without manure," and has raised a "good crop of small grain followed by clover," with no other fertilizer than \$1 worth of gypsum per acre, or has profitably renovated it by the course suggested, I shall be pleased to hear the result of his practice.

Being tempted to enter upon the discussion of the relations of the two great divisions under which our labors in agriculture are directed, that question will be left for the present, for I, at least, have some mercy upon your readers.

For the Maryland Farmer.

TO YOUNG FARMERS.—No. VIII.

Merely scraping and cropping lands, is not farming—is not cultivation—any more than heating, bending and welding iron is blacksmithing; or hacking, twisting and nailing timber is wagon making; as well call the wooly wood sawyer a carpenter, or the boy who thrashes a colt around the lot with a bush to his tail a horseman, as to call the man a farmer who, year after year, "runs down" his land by thin plowing and no manure, and no rotation of crops; it is like the drone or spendthrift who constantly spends and squanders his principal instead of wisely using it and making good interest, to spend. Genuine farming is no such thing.

A true farmer—in the full sense of that noble term—is one who so arranges his crops and ground as most correctly to adapt seed to soil, and both to seasons and climate; who cultivates his land in such manner as continually to obtain paying crops—through suitable rotation, plowing, manuring and draining—without exhausting his lands, and not unfit them this year for crops next year; he selects and rotates his grains, grasses and roots, so as to leave his soil capable of good succeeding crops.

The careful exercise of his mind and reasoning faculties—as other professionals—will enable him to do this; observation, thinking, comparing, study, will make him master of the situation, and give him power in the great and beautiful cabinet of nature, and all her mysterious laboratory.

By observing or reading how others do certain things and noting the results—by observing the laws and operations of nature, and the effects of all, in specific cases—and then by carefully comparing the various results, in view of the surrounding or peculiar circumstances of each particular case, one is able to judge of what is likely to be best for his own operations. For instance, if you learn that one man plowed his land very deep—10 to 12 inches—in the autumn, and then a little shallower in the spring; and thereby obtained a splendid yield of corn, and favors deep plowing; you will note the fact. Another man plowed his land equally deep in the spring, but not at all in the fall, and did not get a good yield—he don't like deep plowing; you will note that fact. In one case, you say deep plowing is good for corn, in the other it is not.—Without thought and study you may be at a loss and bewildered. But you need not be. Plowing deep in autumn, and throwing up the sub-soil to action of the frost in winter, and then light plowing in spring made a proper preparation; but throwing up deep sub-soil in spring, to be baked by the sun, without frost action, will surely give results that

don't recommend deep plowing. But all things must be done rightly. Some even put plaster into the ground, and get little benefit; then cry out against plaster; yet others spread it on growing crops—clover, wheat, corn, &c.—when the sun begins to warm them, and have benefits therefrom; that's the difference.

LAND MARK.

For the Maryland Farmer.

PATRONS OF HUSBANDRY.

All dealers in implements, seeds, fertilizers, &c., will do well to notice this, and communicate with the secretary, Mr. Kelly.

The following circular has been issued by the Executive Committee of the National Grange:

WASHINGTON D C., May 1, 1872.

To Manufacturers of Agricultural and Domestic Implements and Machinery: The Order of Patrons of Husbandry is an organization of farmers and horticulturists, one object of which is to secure to its members the advantages of co-operation in all things affecting their interests. No movement ever inaugurated has met with such popular favor and universal acceptance as this Order.

Organizations known as Granges have been established in nearly every State and Territory of the Union, and the formation of new Granges is going on with constantly accelerating velocity. They are particularly numerous and powerful in the West and South, and the Order is now being rapidly extended through the Middle and Eastern States.

To enable the members of the Order to purchase implements and machinery at as low cost as possible, by saving the commission usually paid to agents, and the profits of the long line of dealers standing between the manufacturers and the farmers, the Executive Committee of the National Grange desire to publish a list of all establishments that will deal directly with State and Subordinate Granges. The list will be regarded as *strictly confidential*, and one copy only will be furnished to each Grange.

Large orders can thus be made up by the consolidation of the orders from Granges in the same State or vicinity, and special terms for freight, &c., arranged with transportation lines, thereby affecting another large saving to the purchaser.

Manufacturers of all articles used by farmers who desire to avail themselves of this means of disposing of their products directly to the consumer for cash, thereby avoiding the losses incident to the credit system, or the storing of goods in the hands of commission merchants and agents, are invited to send their catalogues and wholesale price list to, and to correspond with,

O. H. KELLEY,

Sec'y of the National Grange, Washington, D C.

ARRANGEMENT FOR CROP REPORTS.

This month, the National Grange issues blanks to subordinate Granges, calling for a monthly report from each relative to the condition of crops, quantity of produce and stock on hand and the selling price. These reports are to be compiled, and on the first of each month a confidential circular sent

to every Grange, giving in brief a condensed statement for the benefit of members. The value of these reports is apparent. By having a depository of such information at Washington, buyers and sellers, consumers and producers can be brought together.

TRACTS.

The National Grange has just had 100,000 copies of its tracts printed for gratuitous distribution.—Granges wanting them by the hundred can order direct from the Secretary of the National Grange at Washington. We suggest, where Granges order by the hundred, that twenty-five cents be enclosed to prepay postage on the package.

Persons not members of Granges can have any number of the above tracts, gratuitous, by writing to the secretary.

IOWA, NEBRASKA AND VERMONT.

Iowa now has three hundred and sixty-seven subordinate Granges. The State Grange will probably number between 600 and 700 members at its annual meeting in January next.

Nebraska applied for a State organization, which was perfected in June. South Carolina has also more than the requisite number of subordinate Granges and has applied for a State Grange. The Patrons in Vermont celebrated the Fourth of July in organizing a State Grange. The first Grange in Vermont was organized on the Fourth of July, 1871.

For the Maryland Farmer.

SCHOOL GARDENING—BIRDS—SMALL FRUITS
—INSECTS.

WASHINGTON, June 17, 1872.

Among the subjects discussed by the Potomac Fruit Growers, was—

SCHOOL GARDENING.

Mr. J. L. Smith spoke upon fruit growing in the schools. He wanted to see children interested, and thought it a proper matter for discussion. He gave the description of a German school as given him by a friend, as follows: In the rear of the school buildings there was a large garden, which was divided into squares of about 125 square ft. each, and which was entirely devoted to the use of the pupils.—Those scholars who distinguished themselves in behavior, application, &c., were picked out and divided into clubs of three. Each of those clubs was assigned the use of one of the aforesaid squares, which they were to cultivate themselves with flowers, vegetables and various kinds of fruits. The tools were furnished by the school, while the scholars found the seed. During the recess, instead of climbing about or indulging in other dangerous plays, it was the greatest pleasure of the scholars to

work in their garden. Those who did not take particular care of their portion were dismissed, and others put in their place. On that account each scholar tried to excel the other, each tried to lay his portion out in the most handsome design; each wanted to have the prettiest flowers. In fact, it was a pleasure to look at the garden to see as many different designs as there were squares, each filled with the most beautiful and fragrant flowers, and making itself a great instructor.

Col. S. E. Chamberlain was glad to hear these facts, but said that we were not behind in that, and cited cases where grounds attached to schools were under cultivation. But it was doubtful whether American boys, within schools generally, would allow the fruit to mature—the result of the experiment would be a scramble for the ripening prizes.

Mr. Smith replied that that was one of the very important objects—to train the youth of America to regard and esteem these useful matters in the right light, to use them at the proper times, and not to be selfish pilferers.

SPARE THE BIRDS.

Many members remarked that the birds made greater demands on the fruit this year than usual, but no reason could be given for it, excepting the suggestion that the cold, dry, backward season had in some manner interfered with their supply of animal food in the form of worms, grubs, flies, &c.

This society had early taken its stand in favor of the birds as insect destroyers, and consequently are their friends, and if this unusual season continues to develop such general irregularities as it has started upon, a good opportunity may be offered to test their habits of attaining a livelihood, and showing their real value, as if they are found to spare fruit when they can get insects, and only take the former in absence of the latter, it is a fact in their favor.

The growing of *berries* was advocated as practicable and profitable in this section. A new *insect* had been found ravaging grape vines; the Agricultural Department reports it as of the family of beetles, (*Macroductylus subspinosus*.) The perfect beetle appears in May and June, assembling in great numbers on roses and the flowers of elder, ox-eye, daisy, &c., and feed upon the foliage and flowers of fruit and forest trees.

In Maryland they are especially destructive to roses and grape vines. Their whole transformation is completed within the space of one year. The best manner to rid vines of this insect is to industriously pick them off, or syringe with a tobacco concoction. They seem to appear only periodically. D. S. C.

Winona, Minn., exported last year 3,525,730 bushels of grain.

EXTRACT FROM AN UNPUBLISHED WORK ENTITLED "AMERICAN SCIENCE," &c.

BY LOUIS MACKALL, M. D.

Sphinx-Nicotianum.

In our account of this insect we shall start from the point at which the egg is laid. The egg of the sphinx, whose caterpillar is the Tobacco Worm, is, when laid, about the size of a pin's head, and of a light green color. Its suggestive impression, or the impression from without that suggests to the germ the act of constructing its body, or its obedience to the instinct of corporeal construction, is derived from the atmospheric conditions with which it is surrounded.

Within a day or two after being laid—the time varying with the degree of heat and moisture prevailing in the atmosphere—the egg is hatched. We have said the existence in ovo, of all beings, is spent exclusively in its obedience to the instinct of corporeal construction, or, in other words, is spent in obeying the law of nature that impels or commands it to construct its body. At the end of the time mentioned above, we find, as the result of this obedience or of this work, that the body, in the form of a very slender worm, is so much developed or is so much grown as to press against the envelope or shell of the egg. The pressure thus exerted breaks up the nervous connection between the shell and the rest of the body; and the former consequently loses its vitality and is easily broken on the slightest increase of pressure from within. This stage of development of the body is attended with a change in the appearance of the egg, that is readily recognized, from its green to a brown color, that is most perceptible on the surface of the egg opposite to the head of the animal. On the bursting of the shell of the egg, the worm hastens to relieve itself of its exuviae and to begin to feed on the leaf to which it is attached. At this time the worm is of a white color, of a line or two in length and about the diameter of a cambric needle. The skin is flaccid, or as if but partly filled, enveloping a number of segments; to each of which are attached two rudimentary feet. Muscles, arranged like the intercostal muscles of higher orders of animals, extend from one segment to another; and smaller muscles are distributed to the feet. Those mentioned are the ambulacral muscles of the worm and furnish it with the means of progression. The mode of progression of this worm is by attaching itself by the hinder feet to a surface, and then, by extending the muscles of the segments until it reaches an advanced position to which it attaches its anterior feet; it then, by means of the contraction of the same muscles, draws up its body from behind. This step can be quickly repeated, so as to give to this caterpillar at times considerable celerity of motion.

At the posterior extremity, on its dorsal aspect, is what is called the horn of the horn-worm; which I apprehend is simply a life-point that serves to carry off any excess of life, and to bring in life from the atmosphere when deficient in its economy.—The horn-worm eats but sparingly at first, or until its loose skin is somewhat filled, when it becomes voracious, and soon fills it to repletion, or until it is greatly distended by the pressure of its contents from within.

The function of the delicate nerves that supply

the cuticle of the worm is impaired, and indeed is wholly suspended by the pressure *from within*, of which we have just spoken; and these nerves take on a new action that results in a new cuticle at the limit of vitality, or, on the surface of the cutis. The old cuticle, having thus lost its vitality, becomes dead and inelastic; and the pressure from within increasing by the growth of the worm, it gives way at its weakest points and is thrown off as an old garment. This is the first moult or ecdysis that occurs under favorable circumstances within a few days from the hatching of the worm. The whole period of existence of the worm is employed in a repetition of the process that I have now described—the vigor and voracity of the worm increasing after every moult; when, having performed its last moult, it assumes a purple color, and is prepared to enter upon a new work, or the construction of a new body, that is capable, as we shall presently see, of much higher modes of enjoyment.

To this end, having laid up a full store of materials for this work, the caterpillar of this sphinx stops eating, and descending into the ground to a depth dictated by the instinct made to regulate this act, first constructs out of its old skin a shanty as it were, or a house wherein to work, called a pupa-case or puparium. In this work shop, with its abundant stock of materials at its disposal, the animal commences the work of constructing for itself a new body; and here it continues this work for several months, until it is completed in the ensuing summer; when, from being a crawling worm, feeding on the coarse food furnished by the green leaves of tobacco, it becomes a denizen of the air, and sips the nectar of flowers. Realizing the fancy of the poet, it can

"Like a child at a feast,
But sip of one pleasure, then fly to the rest;
And when pleasures grow dull in the East,
It can order its wings and be off to the West."

In this, as in its former efforts of the same character, the sphinx, in common with every living being when so engaged, is aided by the instructions and guidance derived from the instincts, or from the laws of Nature that are provided for this particular purpose—each being forming a body under these instructions, "after its kind."

We must now enter more minutely into the consideration of the structure of this new body of the sphinx, and of its wonderful adaptation to the purposes in the economy of Nature, for which it is designed. The effort of this being that first arrests our attention is the new arrangement of its nervous system. Instead of the comparatively small and feeble ganglia or nerve-centers that are found at each segment of the body of the caterpillar, several of these are here fused together, as it were, into larger and more efficient organs; to be located in parts of the body that are capable of strong and decided action. These enlarged centers are particularly remarkable in the head, in the thorax, and in the region of the genital organs, where they are designed for the control of organs that we shall find are here especially developed. From the cephalic ganglion or center are distributed nerves to the senses, from the thoracic center, nerves to the muscles of locomotion, as those of the wings and legs, and from the abdominal center or large ganglion are distributed nerves to the abdominal viscera, including the genital organs.

Having this system at its command or in use, the animal proceeds to the formation of the tissues to

which the nerves are distributed. It thus constructs a muscular system and the hard parts or skeleton to which the muscles are attached in their origin and insertion—the latter embracing the dense, horny covering of the thorax and head, the less dense segments of the abdomen, the nerves of the wings and the solid shafts of the legs, &c.

The muscular tissue is extended to all the tubes or hollow organs of the body, so that by the *action* of its fibres these organs may have their calibres *enlarged*, and by the *contraction* of the fibres the calibre of the tubes may be *diminished*. The alimentary apparatus is now entirely remodeled and adapted to the habits of its future existence. In place of the strong horny jaws or maxillæ used to cut the texture of leaves, two long, slender siphons are prepared which, closely connected together, are coiled upon the under surface of the head. The esophagus, stomach, and intestines, are much reduced in size, to correspond to the dainty feeding of the perfect insect.

The respiratory apparatus, on the contrary, is advanced to a state of greater perfection in the new, than in the former body. The trachæ extend from the spiracles between the segments of the abdomen to every point in the body, and are thus made to answer the double purpose of increasing its buoyancy and of adding to its energy of action, by supplying the materials whence is derived an abundant supply of nerve fluid. To this source may no doubt be traced the wonderful energy of action observed in insects, that appears to us so disproportionate to their size.

The genital organs which in the caterpillar were wanting or were rudimentary, is, in the new body, highly elaborated and brought to a state of great perfection. In the male we find the two testes united into one organ, the vasa efferentia forming the epididymis, the vasa deferentia joining and forming the common vas deferens, and terminating in the organ of generation peculiar to the male. In the female we have the largely developed ovaria, capable of containing many thousand eggs at one time, or of extending that number at a single laying—with four tubes or passages in each ovarium to facilitate this extension—a gland and viscifer secreting and containing a glutinous secretion for attaching the eggs to their position when laid, the spermatheca, for the retention of the male semen during copulation, and for the impregnation of the eggs as they pass its duct, and finally, an outlet for the eggs—the vulva.

Of the organs of the senses of this insect, we will advert only to the eggs and to the antennæ that have been most plainly described by comparative anatomists.

The eyes of the new body of this insect are compound, and present a curious and a highly elaborate piece of mechanism. Although differing but little if any in external appearance from those of higher orders of animals, on a closer inspection each of its two eyes is found to consist of a vast number, amounting to some twenty or thirty thousand of smaller eyes or facets; having each the constitution of a fully formed eye, with its cornea, its sclerotic coat, its humus and its retina, and each commanding a certain range of vision; so that these organs, that are common to insects, must be more perfect or must answer the purpose of vision more fully, than the same organs in the higher orders of animals; and consequently are fitted to explore their larger fields of action. From the constitution of

this eye it is inferred that it is capable of the same perception of light with that of our own eyes.

In the reconstructed body of the insect are the two antennæ, projecting like horns from the top of the head. These are jointed members of about an inch in length, well supplied with muscles by means of which it can be "turned every way," or can be moved in any desired direction, and applied to any form of surface. To this organ is referred by naturalists three of the senses, those of touch, of smell, and of hearing. But this is mere surmise, as it may be so constituted as to be capable of perceiving combinations of life of which we can have no conception, and which we consequently have no language to express. Certain it is, that insects possessing these organs have a nice or keen perception of meteoric and other changes in the atmosphere, that enables them to anticipate results, such as storms, &c., before any warning is given through our organs.

The antennæ of the female sphinx or moth are more elaborated than those of the male; in correspondence probably with its more complicated generative apparatus, with its more varied functions—the antennæ in this sex being invested with very numerous cilia on every part of these organs, that must multiply its relations to external objects.

If to this very imperfect description of the bodily organs of this insect be added a covering of the whole, composed of a cuticle thickly set with delicate flattened hairs or microscopic feathers, the reader can still form but an inadequate conception of the perfection of the work of which we have been speaking, or of its perfect adaptation to the purposes designed for its accomplishment in the scheme or economy of Nature.

But, in the contemplation of this perfect work, the conviction is forced upon the mind of even the most careless observer, that the intelligence here displayed is infinitely above that of the being employed on it, and indeed is immeasurably beyond that possessed by any finite mind; and we are thus led unavoidably to refer this intelligence to the infinite omniscient and omnipotent mind of the Author of Nature. The anima of the insect has in truth been but the laborer employed by a Supreme Architect; who has furnished it with the plainest instructions, and aided it with the powerful authority of His laws at every step or stage, as the work progressed.

Before leaving this part of my subject I may be allowed to refer to one or two errors, as they appear to me, that have been allowed to creep into physiological science, and would appear to have originated in the facts here observed. It is thought, for instance, that the cuticle is a secretion of the cutis, or that it is formed by the action of its vessels and nerves. This opinion is at variance with the scientific principle, that I think is well established, that each tissue of the living body has its own peculiar nerves, through which is derived its peculiar character. Thus, there are distinct nerves for the formation of each of the tissues, the muscular, the nervous, the osseous, &c. The cutis and the cuticle are *separate tissues*, and the nerves of the one could not contribute to the formation of the other. The nerve-fluid of the nerves of the cuticle is indispensable to the vital combination that results in the production of the cuticle, and so of all the other tissues. The same remark as apply to the opinion entertained by some naturalists that the members of the imago, the wings, legs, &c., *sprout* from, or are

the results of processes going on in the dermis or cutis. The development of the nutritive or formative nerves destined to each member, must be the first step in the production of such member. The stages of its growth must depend on the combination of the fluid of these nerves with the materials brought by the vessels that are formed, pair passu, with the growth of the part.

We will proceed with the natural history of the *Sphinx Nicotianum*; first asking leave to call to mind the laws of Nature that are the proximate causes of the motions and changes of form observed in the body of the insect, and to correct some errors that have as it were crept into physiological science. The laws referred to are the law of muscular action, the law of suction, and the law of vital combination.

The error committed in natural history, and the same error is extended to every department of physical science, consists in confounding with one another the *laws of Nature*, and the *principles of science*, two subjects that are totally distinct in character, and the ideas relating to which should be kept separated in the mind. Another prevailing error not less prejudicial to the cause of true science is that of confounding *impressions from without* with the *causes of action* in living beings. These impressions, of which we have such frequent occasion to speak, *are not causes*; and should be carefully separated in the mind from the true causes of the acts or actions of living beings, that we have everywhere insisted were the *instincts*, or the *laws of Nature* provided for this purpose.

The first act of the perfect insect when it has thrown off its pupa-case, and has become somewhat accustomed to its surroundings, is the exercise of its new means of progression, and its organs of locomotion. To this end it determines its nerve-fluid to the spiral muscle of its tracheæ, that thus becomes *extended or actively elongated*, and consequently the calibre of these organs is increased or enlarged. Into the vacuum thus made within the tracheæ the air is *sucked* by virtue of the law of suction, and being mixed with the gaseous secretions within these tubes, and with the natural heat of the body, the air, thus introduced, becomes lighter than the surrounding atmosphere, and serves to buoy up the body of the insect. At the same time determining its nerve-fluid to and from the muscles of the wings by the motions so induced in them—alternately extending them forward, and then pressing against the column of elastic air behind or around them—the insect is enabled to progress through the air with wonderful celerity.

Now, will the reader stop a moment and note the account just given of this first act of this insect?—It has a law, or a command from its creator, to exercise the function of locomotion, with which it is endowed. The impression from its surroundings as the atmosphere, the light and heat of the sun, the attractive objects around it, &c., prompt it to obey this command or instinct; this is its suggestive impression; and, in order to do this, or to perform the act of locomotion, it provides the circumstances necessary to bring into operation three of the laws of Nature; that is to say, it provides the conditions for the operation of the law of muscular action, by determining its nerve-fluid to and from its muscles; it provides the conditions necessary to bring into operation the law of suction, by producing a vacuum, as we have seen, within the tracheæ, and subsequently it provides the con-

ditions necessary to bring into operation the law of diffusion, by which its body is buoyed up in the atmosphere. We shall after this see that this account applies to all the acts, to the performance of every material function, of every living being; for we shall establish the following principles of science or shall show the correctness of the following general propositions, namely, 1st, that every act of a living being has, for its cause, a law of Nature—an instinct; 2d, that every such act has its duly appointed suggestive impression; and 3d, that in the performance of any act, the individual can only provide the conditions necessary to bring into operation some one or more of the laws of Nature or of physical laws. Without these latter he can affect nothing—he can produce no motion or change of form, in the material world.

Having acquired by practice the free use of its organs of locomotion, and having the use of its senses, the insect is next impelled by the instinct of alimentation, or by the law of Nature that urges it to take in food for the subsistence of its body.—The suggestive impression that prompts it to obey this law, is derived from the flowers, on the nectar or secretions of which this insect feeds. Are not the compound eyes of insects, with their thousands of facets, or minute organs of vision, designed to take in *at a single glance* the thousands of flowers, with which the animal is usually surrounded, so that they may be compared, and such selected as may be best suited to the purpose required.

When arrived at the flowers selected, commonly those of tobacco or of the Jamestown weed, the sphinx uncoils its long proboscis, simply by determining its nerve fluid to, and by thus *extending* the muscles on one surface or aspect of the tube, by the contraction of which muscles the double tube had been previously coiled. The extremity of this proboscis is then thrust into the fluid, honeyed secretion or nectar, found at the bottom of the corallæ; and, producing a vacuum in the interior of the tubes by the elongation or action of the muscles about their walls, the law of suction is put in requisition; and by virtue of this law the fluid is pumped up as it were into the tubes. This family of insects—the *Lepidoptera*—are possessed of an organ peculiar to them, with the use of which this pumping up of the fluid is very effectually performed. This organ, called the *sucking stomach*, consists of a bladder with muscular walls, lying near the true stomach, with a duct entering the lower end of the esophagus. By the expansion or *diastole* of the sucking stomach another vacuum is formed, and the flow of the fluid in the proboscis is continued towards the alimentary stomach, and into this it is finally poured. From this point the process of alimentation proceeds as ordinarily observed.

While enjoying the pleasures of the senses, of locomotion, and of alimentation, arising from its obedience to the instincts concerned in these acts, the organs of generation are developed and perfected.—The insect is then impelled by the instinct that urges it to propagate its species. The suggestive impression that prompts obedience to this law, is derived in the female, from the mature eggs that distend its ample ovaria; in the male, this impression is derived from the semen contained in its seminal ducts. Urged by this instinct the different sexes seek each other, and the female, having selected her paramour, the union of the sexes takes place, that results, as we have seen, in the filling of

the spermatheca of the female with the semen of the male, which is thus prepared for the impregnation of the eggs, as they pass the duct of the spermatheca, when being extended or *laid*.

The alacrity everywhere shown by insects, in the performance of the acts we have been speaking of, must evince to the observer the pleasure they derive from a due obedience to these several instincts; a pleasure that we have said is appointed in the scheme of the Creation, as a reward for such obedience. In the act of copulation on the part of the male, the whole of its life or nerve-fluid is expended, or, so much of it that not enough is left for the ordinary purposes of its corporeal functions; and consequently the males of the insect die, immediately on the completion of this act.

TO GROW LARGE CORN.

The following paragraph is having "the run" of many papers:

"Can any one raise a hundred bushels of corn to the acre? This question is being discussed by the correspondents of the *Toledo Blade*. Facts are called for, and all farmers who have raised big crops of corn, and who have had a yield of one hundred bushels or more to the acre, will please report particulars."

It is by no means rare to find cases where *one hundred bushels*, or more, of corn to the acre has been raised. Here are a few instances, well authenticated; and I cite them to assure and stimulate others to make the effort.

In 1835, as recorded in Edmund Ruffin's old "Farmer's Register," Petersburg, Va., Mr. Meggison, on Mr. Clarke's farm, raised 110 bushels sound shelled corn on one acre.

The Agricultural Report, 1868, shows that up in cold Massachusetts, J. Goodrich and L. Page each raised 111 bushels of shelled corn to the acre.

The same Reports show that in Ohio several different growers raised 99, 100 and 101 bushels to the acre.

And the writer of this, several years before the war, raised 303 bushels good sound shelled corn from three acres of ground, making 101 bushels to the acre. Other instances could be named, but this is enough for once. D. S. C.

LIME AS A MANURE.

The use of lime as a manure is little understood by those even who use it regularly on their farms. It is not, in fact, looked upon as a manure as farmers understand that term, and some agricultural writers do not admit it as properly classed among manures. But if by the term manure we mean anything applied to the land to restore the waste of growing crops, or to add fertility thereto, then lime is certainly a manure in the truest sense.

It enters largely into the substance of plants grown as crops. The ashes of clover, potato, turnip and carrot stalks, the stalks and leaves of peas, flax, hemp, tobacco, and the leaves, wood and bark of most trees, consist of from one-third to one-half of lime, while the ashes of the straw and seeds of our valuable grain crops contain from 2 to 10

per cent. of it. Lime, then, is largely carried off from our fields by the continual removal of our ordinary crops year after year, and finally the soil becomes exhausted. Not that it would be correct to say that no lime is left in the soil, but what is left is not in such a condition as to become available as food for plants. It is seen constantly in practice that a soil filled with fragments of limestone becomes in need of a dressing of lime to restore its fertility, and the reason becomes plain when we remember that limestone is not lime, is not soluble in water except to a very limited extent, while lime is much more soluble. When this inert limestone is burnt into lime, and spread upon the land, it becomes directly available, and shows marked and immediate effect. Therefore we see in practice that a soil becomes rapidly deprived of lime by the actions of crops in the same way that it is deprived of carbon, nitrogen, potash, or phosphoric acid, and if all these substances are manures lime is also a manure. To test this theory by practice it is only necessary to observe the effects of a dressing of lime on the soil and the growing crops. It has long been known that leguminous plants, as clover, peas, beans, lucern, etc., will often die out and refuse to grow, although the soil has been heavily manured with organic matter, as vegetable or animal remains. Under such circumstances lime has been found to enable them to grow. On soils naturally producing coarse, wiry grasses, unfit for pasture, lime is known to bring in a sweet, nutritious herbage, relished by stock; and when we remember that one-fourth part of the weight of the skeleton of an animal is lime, it will readily be understood why the natural wants and instincts of an animal induce it to choose that food in which lime is contained in greater abundance, and why such pasture is better fitted for it.

Indirectly, too, as well as in this direct manner, lime has a valuable office to perform for the farmer. When lands are rich in vegetable matter it is often the case that crops of oats, wheat and other grains, by reason of a want of stiffness in the straw, are unable to retain their upright position, the crop "lodges," and the harvest is lost to a great extent. Lime has long been found a remedy for this weakness of the straw, which is really occasioned not so much by want of lime as by want of silica; the plant cannot appropriate enough of the substance to supply its needs. The silica is insoluble. Lime acts on the insoluble silica, and renders it able to enter the circulation of the plant and perform its office. Again, soils containing a large portion of vegetable matter, as swamp muck, decaying leaves or straw, which as yet are not ready for use by the plants, are "brought up" instantly by lime. The undecomposed matter is acted upon rapidly by the lime, becomes more soluble, enters into circulation with the juices of the plant, and furnishes necessary sustenance. Lime is a powerfully destructive agent to animal and vegetable substance, and rapidly reduces it to decomposition. On this account it should never be mixed with other manures, unless at the moment of applying them to the soil or immediately after. Thus, in practice, it is commonly spread on a field in which barn yard manure or a green crop has been plowed under and harrowed in, either with the seeds or immediately before sowing it. As these operations are generally performed in the latter part of the summer, it is at this season that lime is mostly used.—*N. Y. World*.

Leeds' Champion Post Auger, or Post Hole Digger.

This cut illustrates the Leeds' Post Auger perfectly. The cylinder is of steel, sharp at its lower edge, the bevel all being from the inside. It is left open on one side, so as to allow it to spring open and hold the dirt that is pressed in it. The handle is of round iron, and long enough to make a hole four feet deep.



It will do the work twice as fast as any other implement for the purpose.

It will do the work much easier.

It will do the work better, as the hole can be made any size or shape required.

It is easily kept in order.

Anybody can sharpen it.

Can dig to any depth you choose with it.

This is a really good article, and cheap—only \$5. Thos. Norris & Son, are agents, Baltimore, and can be had of agricultural implement dealers generally.

DECREASE OF GRAIN PRODUCTION.—The average production of grain per acre has steadily fallen in the United States, but in England it has increased. In New York, for instance, it has fallen in the last fifty years from twenty to eight bushels per acre, and in California the decrease per acre is somewhat startling. Improved cultivation, and the application of manure, has brought up the standard in England, and it will do it in the United States.

FARM IMPLEMENTS---"DON'T MIND THEM."

The *Christian Union*, tired of throwing away good, sober, serious advice, waxeth "sarcastikul," in this wise—viz:

"We have resolved, for the present at least, to change our tactics regarding the care of farm implements. Hitherto we have, in common with the agricultural papers in general, urged farmers to take great care of their tools and machines. We have even printed directions for oiling, and painting, and storing, and the like. Now, however, we have abandoned that line of policy. The dealers in and manufacturers of such implements must live, and as we have some friends and acquaintances among them, we are convinced that we have been too forgetful of their interests. An editor says that during a ride of ninety miles which he took through an averaged agricultural district, he counted the following unhusbanded implements, namely: forty-four plows, twenty-three harrows, seven mowers, one reaper with beater and platform as last used, wagons too numerous to count, and, in one instance, a set of harness hanging on a fence. The plows were mostly standing in the furrow where they had been last used. Such a sight as that gladdens the heart of the itinerant manufacturer, and is an example which ought to be followed by every tiller of the soil who wants a new set of implements. Farmers, attention! Do not rub linseed oil on your fork and shovel and rake handles, do not paint your plows and mowers, do not use any rust preventive on the iron and steel parts, and above all, leave everything out of doors. You really have no idea how quickly you will possess a new set of tools, provided you have a balance at the bank, if you abandon that most objectionable structure, the tool house. Only seven mowers and one reaper out in the air in a stretch of ninety miles! And only one set of harness! Well, we will hope for a better report from that section the next time our agricultural cotemporary goes that way."

Potato Planting.

As to potato-planting, there is much diversity of opinion how the potato is to be prepared to be put into the ground. Some who have tried nearly a score of different ways have succeeded best with *large whole* potatoes; others are equally satisfied from experience that the *half* of a large potato cut lengthwise is the best; others, again, prefer medium sized tubers whole, others cut; others, again, think the size of the potato has no influence upon the productiveness of the crop. From what we know ourselves about potato-raising we should choose the half of a large potato, cut two weeks before planting, spread out on a barn floor, and well powdered with gypsum. The ground for the potato should be a loam with a clay subsoil, or what we should like better, a clay loam, and be free from standing water or moisture occasioned by want of drainage. Lay the pieces nine or ten inches apart cut side down, in the furrow, not over four inches in depth, cover well with good barn-yard manure; and when the plants are up and after the first harrowing, sprinkle the rows well with plaster, (gypsum,) and cultivate thoroughly.—*Germanatown Telegraph* of

For the Maryland Farmer.

SUNDRIES:

AND CHIPS FROM A WORK SHOP.

Cattle Diseases.

Garget—Caked Bag—Ropy Milk—Bloody Milk.—

As the above troublesome disorder appears to have given stock raisers a great deal of trouble, and as I have had several cases to treat, I submit my mode of treatment, which has invariably proved successful with me: apples, salt and water—a handful of salt in a quart of water, or as much as the water will dissolve—as hot as the cow will endure it, with a gentle downward motion of the hand over the whole bag. Rub thus for some time—say five or ten minutes—and then apply linseed oil; perform three times a day. This disease appears to come from improper milking, hot weather or retention of milk in bag too long just before calving, resulting in the formation of a tumor, which it is necessary to dissipate. Another cause assigned for the disarrangement, in rural veterinary practice, is the milking of the cow by a snake; this I have never seen. Whilst making the application here recommended, draw from the bag by constant effort all the milk that can be extracted, as the manipulation of the bag has a tendency to break up the tumor and release the fluids that form it.

Prevention, however, is better than cure, and as this complaint usually affects heifers at their first calving, it would be better to milk the animal previous to calving, should the condition of the bag indicate its necessity; in regard to old—or rather older—cows, the perpetual milking system (without any of the usual rest for the benefit of the placental energies of the animal,) now advocated by distinguished farmers, would entirely prevent the difficulty from protracted retention of milk. Cases of this character are now before me, in which the practice has been successful; if by proper breeding and feeding we could make this feature practicable the advantages of the course are too obvious to require enumeration.

Foul in the Feet—Lameness.—I had my first case of this disorder last winter in a heifer; she stood in a dry, well-bedded stable in bad weather, and nights, but ran on a corn-stubble field during the day, where I fed out my stalks, and as the ground was somewhat soft, I attributed the difficulty to the irritation caused by the friction of the parts in the dirt: I washed the parts with soap and water—every farmer should keep carbolic soap on hand for such cases, but I didn't—and as one plan I tried did not prove effective, I diluted carbolic acid (Calvert's Imported, though I presume the home article is equally good if not better,) with forty parts

boiling water, and applied after each washing, which should be done once in twenty-four hours, keeping the animal on dry ground. This application proved successful. Before closing my chapter on cattle diseases—which I offer merely as an item or two of domestic practice—I wish to say a word about

Hollow Horn—Hollow Tail.—This idea of boring into a cow's horn, and splitting open a cow's tail, and putting vinegar and pepper into it to cure hollow tail, has been severely ridiculed, and these names have been considered mere synonyms of hollow belly. I will give my testimony on this point, and your readers can decide the matter. An old but first-rate cow of mine calved but did not "clean," got poor and lost her appetite. I made use of measures I had hitherto found effective in such cases, but the after birth still clung to her, and as the time had not come for removing it artificially, I left it alone. One of my neighbors was over, and he remarked, "she's got the hollow horn; get me a gimlet and I'll bore her out for you." I had no objections to *trying* it, and one horn was bored; it was hollow; the other one sent the blood after the gimlet; but from that moment the cow improved, recovered her appetite, and cast off the after birth without the operation of any other cause to which I could attribute the change; the cow being a deep milker—twenty-four quarts a day—did not run to flesh, and was only in fair order at time of calving, but received the attention usual under her conditions; but whether her condition was good or bad at calving time would appear to have no bearing upon the apparent effects of boring the horn; I will report my first case of hollow tail and its treatment for the benefit of your readers, whenever hollow tail shall make its appearance at Linden Valley.

COPPERAS AS A DEODORIZER.—"One pound of green copperas costing seven cents, dissolved in one quart of water, and poured down a water closet, will effectually concentrate and destroy the foulest smells. On board ships and steamboats, about hotels and other public places, there is nothing so nice to purify the air. Simple green copperas, dissolved under the bed in anything that will hold water, will render a hospital, or other place for the sick, free from unpleasant smells. For butcher's stalls, fish markets, slaughter houses, sinks and wherever there are offensive putrid gases, dissolve copperas and sprinkle it about, and in a few days the smell will pass away. If a cat, rat or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in an open vessel near the place where the nuisance is, and it will soon purify the atmosphere."—*Industrial Monthly.*

THE
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Maryland State Agricultural and Mechanical Association.—The Rooms of the Society for the present are located at the corner of Charles and Lexington streets, Baltimore, where Farmers and Planters of this and other States are cordially invited to call whenever they may visit the city.

GEO. S. BROWN, *President.*

D. C. TRIMBLE, *Gen'l Secy.*

THE MARYLAND INSTITUTE EXHIBITION.—The Annual Exhibition of the Maryland Institute for the Promotion of the Mechanic Arts, will commence on Tuesday, October 1st, and close October 31st. The Hall of the Institute will be open for the reception of goods on Monday, September 23rd. A very elegant display is anticipated by the Managers, as every effort is being made to make it a grand success.

THE STATE ROAD COMMITTEE.

To Meet in Baltimore, August 22d.

The committee appointed by the State Road Convention held in March in Baltimore, Col. W. W. W. Bowie, President, to draft a State Road Law for the action of a future Convention, and fill out its number by selection of prominent agriculturists from every county in the State, met at the office of Norris & Bro., 57 Second Street, May 8. S. Norris, of Harford, occupied the chair, and Wm Webster, of Baltimore county, was elected Secretary. D. Lawrence, of Howard, presented letters from the Governors of the different States in answer to the circular of the Committee sent for information regarding the operation of the respective road laws and advocated a strict system of county road making in road districts of one, two or three miles, according to circumstances, and giving each county control—through a Commissioner of Highways, acting with the County Commissioners—over its own public roads, (and making them responsible for their good condition,) upon the basis of the labor tax system, mentioned in our last as the decision of the State Convention.

Wm. Webster, of Baltimore county agreed with the above views in all essential features, but differed in regard to the manner of their execution, and was in favor of the district system of repair, i. e., giving each election district control of its own roads through three Commissioners of Highways, elected in each district, the President of each District Board to be a member of a County Board of Highway Commissioners, to attend to the building of bridges between different counties, and exercise general supervisory, executive and appellate powers. This system entirely separates the road business from everything else in the county, making of it an entirely independent institution.

Dr. M. Merryman of Baltimore county, was in favor of making the repair of the roads a separate business, but thought all funds should be collected through the regular tax collector of the county, and that elections for officers to supervise the repairs of the county roads should be held in the spring of the year, to the end that the disturbing agencies hitherto in operation to prevent a proper solution of the question of road repair, might not embarrass the new system.

S. Norris, of Harford, was in favor of a well paid executive officer and a money tax, but the remainder of the Committee, while conceding the excellence of this system under favorable conditions, held that farmers would be willing—because more able to pay labor on the roads than money, but it was finally agreed to combine the two systems, and make it a labor tax in most part, and a small money

tax for the building and repair of bridges, and other improvements which would require an expenditure of some money; this was one result of the session; the other was a settlement of the different views entertained by Messrs. Webster (for the district system) and Lawrence, (for the county system,) the latter finally accepting Mr. Webster's modification of his proposition, which was essentially the district system on a larger scale. This secures the harmony of the Committee upon all the principal points of the questions submitted to them; the work now remaining is to embody these views in a law, to be submitted to the full Committee, (which will meet in Baltimore August 22.) and after that to the State Convention.

The Committee also appointed a large number of distinguished agriculturists from the different counties for consultation upon the matter.

The Committee directed the Secretary to notify by letter each person so selected, and to request each one who could not attend to select a substitute, as it is held important to have a full expression of public sentiment from the whole State. In some counties the post-office address of those whom the Committee would have selected was unknown, and they informally directed that in those counties where only one or a few were named, that he or they be requested to select and notify two or more gentlemen likely to take an interest in the subject, to constitute a delegation to represent that county in the Committee, to assemble as above designated. The following gentlemen were placed on the Committee—and it is hoped there will be a full and punctual attendance on the 22d inst., at 12 M., at the Rooms of the Agricultural and Mechanical Association, southwest corner of Charles and Lexington Streets, Baltimore.

Alleghany County.—Dr. Sam'l P. Smith, James Wilson, R. D. Johnson, Fred. Wield.

Anne Arundel County.—Jas. R. Howison, E. Sheriff Duval, Hon. Jno. Thompson Mason, John Hopkins, Richard Cromwell, Jr., Franklin Weems, Luther Giddings, Dr. Rich'd S. Stewart.

Baltimore County.—Wm. S. Whitely, Jno. Merryman, Thos. Love, Pleasant Hunter.

Carroll County.—August Shriver, John Smith of Wakefield, Geo. W. Vanbibber, Wm. H. B. Dorsey, G. Shower.

Calvert County.—Judge Dan'l R. Magruder.

Charles County.—And. A. Chapman, Judge Geo. Jenkins, Jno. W. Mitchell, Capt. Sam. Cox, Jno. Mitchell of Walter, Jno. Jenkins.

Caroline County.—Dr. Hardcastle.

Cecil County.—Wm. N. Knight, Jas. Touchstone, David Scott, Dr. Wallis, Wm. Ward, W. Whittaker.

Dorchester County.—Geo. K. Austin, Jas. Wright, Clement Sullivan.

Frederick County.—John Loats, Keyfort Thomas, Jas. A. Gambrill, John Clemons.

Harford County.—E. S. Rogers, W. L. Fendall, Wm. B. Stephenson, John R. Street, Wm. Pannell, H. D. Fernandis, Jno. H. Price, Ramsey McHenry.

Howard County.—Col. Thos. H. Gardiner, J. R. Clarke, Henry O. Devries, John A. Dorsey, Aaron Chadwick, S. K. George, Jr.

Kent County.—Alex. Wilson, Edward Wilkins, James Alfred Pearce, Nathan Comegys, James Spencer,

Montgomery County.—Edward Stabler, Wm. Henry Stabler, Jos. H. Bradley, Allen Bowie Davis, Henry C. Hallowell, Geo. Reter, Thos. Landsdale.

Prince George's County.—Jno. F. Lee, Col. Wm. D. Bowie, Col. R. W. W. Bowie Fendall Marbury, Wm. B. Hill, Elbert Emack, John Snowden, C. E. Coffin, James Mulliken, Dr. Wm. W. Warring, Jno. D. Bowling, J. T. Walker.

Queen Anne's County.—Dr. Wm. H. DeCourcy, William McKenney, Col. John R. Emory, John Brown, C. J. B. Mitchell.

St. Mary's County.—Dr. Thos. A. Lynch, Jas. Downs, Jas. Ellicott, Benj. C. Harris, Col. Chapman Billingsley.

Somerset County.—Levin L. Walters.

Talbot County.—Col. Edward Lloyd, Dr. J. L. Athens,

Thos. Hughlett.

Washington County.—David Brumbaugh, And. J. Hager, Wm. Dodge, Isaac Motter.

Worcester County.—E. King Wilson, Judge J. Franklin,

Mr. Dennis.

Wicomico County.—A. J. Crawford.

MARYLAND STATE AGRICULTURAL AND MECHANICAL ASSOCIATION.

We are happy to announce to our readers our sincere conviction that the meeting of the State Agricultural and Mechanical Association on the 8th of October next, at Pimlico, will be a success. We hear of many important improvements in progress, and of the deep interest manifested by the several Officers in the different departments of this Society. Increased facilities will be furnished the public for reaching the grounds with the least possible inconvenience or expense. The Baltimore, Pimlico and Pikesville Horse Railway has been organized, and will, it is confidentially asserted and believed, be in running order to Pimlico by the time the agricultural fair opens in October next. The company some weeks since commenced grading the road. This road will connect with the Madison Avenue, Green Street, and Citizen lines of cars running into and through the city. This new line of horse cars, the Northern and Central Railroad, and the many additional omnibuses, hacks, ambulances and other conveyances, that will be placed on the different roads leading to Pimlico, will afford ample transportation to the thousands who will visit the Fair the present year.

"GREELEY" WHEAT—FROM TENNESSEE.

We received last month, from Messrs. Hough & Church, Seedsmen and Dealers in Agricultural Implements, in Knoxville, Tennessee, some very superb heads of wheat. The specimens received had been cut green, but the grain showed that had it matured it would have been large, and many grains in a head. The seed was imported from England. They report the crop as very fine—and have named it after H. Greeley, whose name just now seems to attach itself to everything new or surprising, or which is desired to be made popular. Dolly Vardens are going out and Greeley's coming in—fashion! Such is the constant mutability of fashionable popularity,

ACKNOWLEDGMENTS.

We have lately received a neat "Illustrated Manual of Swine and Swine Breeding," from Messrs. Shepard & Alexander, of Charleston, Ill., "Breeders of Poland China Hogs." It contains much interesting history and useful information of and pertaining to pigs, and hog breeding, and hog diseases, &c., &c.

From the Agricultural Department a valuable treatise on the "*Diseases of Cattle of the United States.*" It is splendidly illustrated by numerous engravings, and seven or eight chromoliths, executed in superior style by Hoen & Co., Baltimore. The treatise is chiefly upon the *lung plague*, by Professor Gamgee and Col. J. J. Woodward, Assistant Surgeon of the U. S. A., and Professor Gamgee on the *Splenic Fever*. It is well worthy the study of all who own cattle.

THE TRANSACTIONS OF THE N. Y. STATE AGRICULTURAL SOCIETY FOR 1870—has just been received, and does credit to that well managed association. One greatly to be commended feature in the New York system for the promotion of agriculture, is the requirement that every county, township or club association shall report to the parent State Society annually, and their several reports are published with the annual transactions of the State Society. This volume is replete with valuable information upon "The Principles of Breeding Domestic Animals; Wool and Mutton in America; A Better Market System; Farmers' Homes; on Straw, Chaff, and Best Mode of Preserving Chaff for Feeding; Hops; Grape Culture; Biology and History of the Development of the Ustilaginæ; Noxious, Beneficial and other Insects of the State of New York; interesting reports from the County Societies," and other subjects of moment to the reading farmer, and all who desire information on such matters. We shall before long make copious extracts from this work for the benefit of our readers.

THE MODEL POTATO.—An exposition of its proper cultivation; the cause of its rotting; the remedy therefor; its renewal, preservation, productiveness and cooking. By Dr. John McLaurin. Edited with annotations, by R. T. Trall, M. D. 12mo, 102 pp. Price 50 cents. S. R. Wells, Publisher, 389 Broadway, N. Y.

This little book is beautiful in typography, and excellent in its matter. It is worth greatly more than its price to every potato grower. The growing of new varieties of potato from the "plum," or seed ball, has been practiced a long time, for we originated twenty-five years ago a new variety of potato, which was very large, very prolific, and a nice table vegetable. It was grown from the seed ball of the Rohan potato, which was introduced from Europe, and made such a sensation that they sold at twenty-five cents (silver) each. It proved only fit for stock. We planted it with the old Mercer, then the rage, and whether the two hybridized or not we are not prepared to say, certain it is the "*Bowie Seedling*" proved a remarkably fine table potato, and had it been put on the market as later seedlings have been, would have proved to its originator a small fortune. We commend this little work to our readers, and our thanks are due to the publishers for a copy.

BEE-KEEPER'S MAGAZINE.—It gives us pleasure to speak kindly and favorably of the first number of "*The Bee-keepers' Magazine*," received from the publishers, Messrs. H. A. King & Co., New York and Chicago. It is a monthly of 43 pages. The contents are well selected, and the original matter very creditable. Its illustrations are in the highest style of chromo-lithography. These chromos are

of some leading honey plant or plants, beautiful, and as true to nature in coloring as high art can make them. It is a very valuable work for the beginners of an Apiary, and in our judgment there cannot be too many to begin this interesting employment, which is one of the most profitable of all the small industries to which we have alluded in our leader of this issue.

Received from David Landreth & Son, Philadelphia, a very valuable treatise on "*On What we Know About Turnips*," who furnish in this little book their experience for private distribution. It embraces method of Preparing the Land for Turnips—Method of Saving for Winter Food—and Varieties of Turnips—with much new and useful information in relation to this valuable crop.

From Charles Brown, Esq., President of the Farmer's Club of Kent county, Del., an address on "*Land Drainage*," delivered before the Club, January 1872, by G. Emerson, M. D., of Philadelphia. The subject of Drainage as affecting this country is handled with great ability.

MARLBORO' GAZETTE.

This highly popular and excellent weekly, published in Upper Marlborough, Prince George's county, Maryland, by Hon. Geo. W. Wilson, comes to us in a new type, and presenting a large sheet, very creditable in typography and excellent matter. The present volume commences the 37th year of its existence, with one of the sons of the veteran editor as an associate on the Editorial Staff. Mr. Wilson, Sr., is the President of the Association of Maryland Editors, and has also of late been complimented by being elected President of the Southern Editorial Society which recently made an extensive tour North. We welcome the Junior Editor into our brotherhood, and extend to him our warmest wishes that his career may be as prosperous as that of his father, whose merits and worth has commanded and received that success, which we hope he may continue to enjoy many years to come.

HEAVY YIELD OF WHEAT.—The *Easton Gazette* chronicles the following yield of wheat in Talbot county, Md.: "M. G. Feddman, Esq., has just machined out a crop of wheat, raised on a four acre lot on the Point road, which made the most remarkable yield we have ever heard of. Last fall he seeded on this lot four bushels and three pecks of wheat. The cold winter and late spring caused it to look very sparse late in the spring, but when run through the machine it produced one hundred and twenty bushels. Five years ago this lot would not have produced forty bushels of wheat with the best of seasons to assist it. Lime ashes, stable manure, draining, deep ploughing and good management have done the work."

The July number of "*Practical Farmer*" comes to us with its accustomed promptness. While emphatically a representative paper for this section of the Union, it also circulates West and South to our most distant boundaries. The information it gives being both practical and progressive, it is considered by many one of the best Agricultural Papers in the country. Its Editor, Paschal Morris, has been a cultivator of the soil for twenty-five years. The July number contains over 80 articles. Published at 18 N. 13th Street, Philadelphia; price only \$1.50 per annum, for 24 Quarto pages, well illustrated.

KENT COUNTY FAIR AND EXHIBITION.—The Annual Fair and Exhibition of the Kent County Agricultural Society will be held at Hawkin's Park, near Hainesville, Kent County, Md., on Tuesday and Wednesday, 17th and 18th of September. Over one thousand dollars will be distributed in prizes.

POLAND CHINA OR MAGIE HOGS.

This remarkable breed of Hogs—*Poland China or Magie*—has been obtained by judicious crossing and well directed judgment and skill in breeding. It was in 1830 a mixed breed of Poland, Byfield, China and Grazier blood, and then the true Berkshire with a cross of China, was infused into this blood, and hog perfection was reached, and since 1834 and 1835, no new blood has been introduced.—Breeders have since then carefully bred from the best animals thus produced. In this careful, patient and judicious manner, a splendid breed has been obtained. It is claimed by those who are familiar with this breed of swine, in the words of Messrs. Shepard & Alexander, of Charleston, Ills., who are the owners of the first class prize animals at the National Hog Show last year, and whose pamphlet on "Swine and Swine Breeding," we have acknowledged elsewhere in this number of the *Maryland Farmer*, that they are remarkable "for their size, symmetry, docility, early maturity, aptitude to fatten at any age, and also for their practical utility."

"They can be made to weigh at 10 months old, 350 to 400 lbs.; at 18 months, from 500 to 900 lbs.!! The best average of fat hogs, made in the United States, have been of this breed. One lot of forty head raised by one man, *not picked or selected*, averaged at twenty-two months, *six hundred and thirteen pounds*, and we challenge the world to beat it. In color they are spotted black and white with occasionally a sandy tinge, varying however, according to the peculiar fancy of the breeder, from almost white to nearly black. The sandy tinge occasionally shown is evidently from the old Berkshire and Poland blood.—The best specimens have long bodies, short legs, broad straight backs, deep sides, very broad, full, square hams and shoulders, and drooping ears; are hardy, vigorous and prolific, and when fat, perfect models all over, pre eminently combining the excellencies of both the large and small breeds." Again, they say, "he can rough it with true Western grit, and brings the highest price in the market. In short, is not a band-box hog, but a practical, profitable breed. A good little pig is good, but a good big pig is better."



Black Bess.—At two years, weight 648 pounds. Winner of first prizes at Illinois State and St. Louis Fairs, and sweepstakes at National Hog Show, Chicago, in a show of 343 head. She was also one of the herd of boar and three sows that received sweepstakes premium at Illinois State Fair 1871.

Through their politeness we are enabled to present our readers with a life like and true to life picture of "Black Bess," one of their celebrated premium animals at National Hog Show at Chicago in 1870.

JAKOBB DUNK PAPERS
ON
FACTS, FILOSOPHY AND FARMIN.
PAPER NUMBER XI.

On Agricultural Combination.

It appears proper that the most important subject connected with the farmer's vocation should be presented in the month in which he can spare most time for its consideration. A glance at the benefits which other arts and callings have received through the agency of combination—a contemplation of the mighty monuments which it has reared to commemorate the achievements of other pursuits—will cause deep astonishment in the minds of intelligent observers, that the agricultural classes have thus far failed to make use of it—to any considerable extent—as an indispensable adjunct to their complete success. This question of working together in behalf of our common interest had been agitated amongst us, and we got up a declaration substantially in this form:

"We, the undersigned, farmers of Parland county, desirous to take steps for our advancement and the protection of our interests, hereby signify our intention to establish a Farmer's Club, and pledge to the same our presence and support."

We had the names of the intelligent and respectable portions of the community, or nearly all that could be conveniently reached; but in a matter of this kind it is necessary to secure practically, unanimity; combination means this: it is the strength of numbers concentrated on one point, not the divided and counteracting forces of a number of people pulling against each other. To secure the best results there must be no clog upon the activity of the energetic ones, and being anxious to secure the co-operation of every man in the community, I broke the subject to Mr. Dunk one day as I met him coming from the Codge, and handed him the paper.

His pipe was with him.

"How d'y do, Joodge," said he, "fine wether on korn; what ye got here? More Papers? A petition, I suppose?"

You have noticed that every piece of writing paper floating around the community is a "petition," except a judgment.

"It's a declaration," I replied.

"A wot?" and Jakobb felt for his spectacles.

"A declaration of the intention of certain parties to form a Farmers' Club, and I want you to sign it and give us your help in the matter," I replied.

"A club, hay?" returned Jakobb, "how ye goin' to manige it?"

"We will get together, form ourselves into a society, appoint officers, and draft a constitution for our government. Put your name down," I added.

"Don't know about that," said Jakobb, "hain't this a plan of sum feller to git money?"

"I'm one of the 'fellers' that's at the bottom of it," I replied, "and you know these things always cost me more than I ever get out of them."

"You take up a collection, don't you?" asked Jakobb.

"Money will be necessary to prosecute the enterprise successfully," I returned; "it is like everything else that promises returns; money must be invested to secure those returns, and this is merely

a question whether the time and money spent will pay."

"Takes a heap o' time to tend on one, don't it?" said Jakobb.

Not one quarter the time you spend at the Codge—was on the end of my tongue when I saw him so careful of his time, but sharp words are a poor bridge to cross rough waters on, and I replied:

"The actual time spent in attendance is not much after the work of organization, and will not be missed from the farm; especially," I added, "where a judicious use of remaining time is made, you'd better put your name down and try it for a while at least."

Suddenly Jakobb changed front, and assuming a mysterious air, said very confidentially,

"Joodge, thit thar thing is a plan of some feller that wants orphis, and don't know what else to do to git it, and I an't goin' to be trapped by it; these yere politicians is always up to some new dodge, and we must watch em."

"From the terrible misfortune of having a man in office who cares more for the interests of the farmer than other interests whenever there is any conflict, I think rural Maryland will be mercifully preserved for some time to come. The controlling agent in our elections is not a plan for the elevation of our farmers, but a whiskey bottle. Besides," I added, "did you ever know in all your life a man to go into office for the good he had done the agricultural interest?"

"That's jes the trouble, Joodge," said Jakobb; "these yere other fellers gits all tha want, ond the farmin' man gits what they let him have."

"And yet you appear very fearful that some farmer who makes himself useful to his class will get a position," I remarked.

Jakobb saw the point, and fell back on the old rampart of ignorance: "he'd lived high onter sixty yers, and hadn't had no sich a thing in the community, nor never had heerd tell o' sich carryin' on 'mong them old time people, and tha raised good crops without any klubs to tell 'em how to do it, and reckoned he could get along a little while longer."

"Mr. Dunk," I replied, "the work of those early settlers was dictated by necessity, not choice. The land had to be cleared first, and then such crops planted as would keep and bear slow transportation to market, and perhaps transhipment. The work was routine; but even then there is no doubt interchange of opinion concerning the best modes of culture, would have been profitable, as well as exercised a good influence upon society. Do you suppose," I asked, "that we should see as much dissipation around us now if our forefathers had brought more intellectual energy to bear upon society then? Wherever intellectual development is practiced in a neighborhood, wherever the physical forces with which the farmer deals so largely are brought under the strong government of trained mental power, more work is accomplished physically, and the standard of excellence thus set up has a direct bearing upon the moral feelings of the community.—Education means good government in every part; ignorance is social demoralization. Look at the organized and cultivated Society of Friends, at Silver Springs. They are our criterion, our model, our grand exemplars. Why not make this section a pattern also?"

"What kin a few farmers do ag'in so many that's a workin' ag'in them?" asked Jakobb, "and how

are they goin' to do it? Hain't we got a Legislator fur all this business?"

"Other callings have done something for themselves: by their combined action and money, and notes, they have secured a strong hold of the whip under which the farmer is smarting; the hatters combine, and tell him how much he must pay for a hat; the shoemakers combine, and tell him how much he must pay for his shoes; by limiting the number of apprentices, and other proceedings, their transactions amount to a special high protective tariff in their favor from which the farmer must necessarily suffer. This is pre-eminently the age of monopoly; of combination; the great works of art, modes of international communication, vast span bridges, long tunnels bored through miles of mountain rock, rivers sent through natural wastes, gardens planted and made fertile amid the drifting sand of the desert, continent-lengths of railway, the dissemination of knowledge, articles of daily use and luxury, the preservation and enjoyment to a great degree even of national blessings, all are the splendid product of association, and with this magnificent record of its achievements before him, the apathy of the farmer in view of the benefits that would accrue from its employment appears unaccountable, especially when we consider the advanced stage which organization has attained outside of the vocation of the farmer; for standing alone, unprotected, he not only has nothing whatever to say concerning what he shall buy at, but must sell his produce at others prices, having no voice as to what it shall bring, whether he is selling at a loss or at a profit.

Is it not strange that farmers are not all rich and happy?"

"Joodge," said Jakobb, "do you think we could ever regeerate the price of wheat and bring wages down? They say up at the Codge that that's the objek of this here thing, and that all the farmers 'bout here is goin' to jine to put wages down to ten dollars a month, and put up the prices o' produce so 'at a poor man can't git along."

"About the price of wages, Mr. Dunk, it does not appear worthy a reply; that is one of that class of rumors which unfortunately accompanies every effort to elevate the farmer: originating in 'Codges' and 'corners,' which are a disgrace to the community that tolerates them, can you wonder that people who practice their sentiments don't succeed in life?"

Jakobb felt the full force of this remark, and "flared up" immediately, as usual, but when he remembered that I had the documents against him he said very little, and I continued:

"In regard to the price of wheat or wages, either for that matter, I would start the organization and deal with both in a proper spirit; the principle of free trade, that is an uninterrupted operation of the laws of demand and supply, is best for all parties; all leagues to obstruct those laws are conspiracies against some individuals who must suffer thereby; combinations—corporations, monopolies, organizations—usually effect such obstructions, and operate unjustly where there are no counter-combinations to resist their aggressions; where there are counter-combinations a peaceful settlement by arbitration offers a just solution. If shoemakers and hatters combine to dictate the prices of boots and hats, farmers should combine to dictate the prices of produce."

"They'd all starve to death in them big cities if

they couldn't pay our prices, Joodge," said Jakobb.

"Deprive the farmer or the mechanic of the assistance of the other and it would be difficult to say—in view of the vital necessity of either to the other—which would be worse off. Society, as now constituted, is a connected chain of many branches of industry, whose most important link it would be difficult to ascertain, and where men are so closely united there should be equal combination for equal protection."

"Well," said Jakobb, "go ahead with it and I'll see how ye cum on," and we parted. That's the idea exactly; Jakobb brought the matter to an issue squarely. We farmers are an enterprising class. We ride along almost imperceptibly—or with agreeable perception—on the smooth surface of some well kept road, and we say, "how nice it would be to have just such a road up to our doors;" and we wonder why somebody don't "go ahead" and build it; we would like to have good roads, and yet we let a little band of farmers—some burdened with professional duties also—get together and grapple with the great question of good roads for Maryland; a question of vast importance to every individual within her borders.

We are an enterprising class. A neighbor of mine rode to the station the other day and took the cars for Baltimore, the first time in a life of nearly sixty years, and when he came back he couldn't find language enough to express his delight at the dispatch with which he was enabled to execute his business and return, and the pleasing sensations of railroad travel, (the result of combination)—"so like a rockin'-chair workin' back'ards and for'ards on nothin' you know," and yet he would see a pestilence creep up out of the great city and sweep away the living tide between him and it, before he would attend a combination narrow guage road meeting of farmers, or strike a blow on the public highways for nothing; he wonders "why somebody don't go ahead and build plenty of sich roads for people to travil onto;" and he represents his class.

We grumble at the "high prices" and "hard times," and pay any price for our goods, when we might combine, buy the raw material, get a hatter, shoemaker, saddler and tailor in the neighborhood, keep them busy, improve the county, make a home market for our produce, and clear something besides.

We go to Baltimore and permit two or three profits on some of our produce by means of middlemen, when by a grand co-operative distributing establishment we might reach the retail trade direct, and share in the retail profit, and then come home and go up to the "Codge" and drink and talk away half a day over our misfortunes, and wonder why "somebody don't 'go ahead' and do it," and when somebody does go ahead, we hold back and say "he wants an orphis," or "it's a conjuration new fangled idee," or "he wants to make sum munny out of it," and after the thing has failed for want of our support, we go up to the "Codge" again and drink to that remarkable prescience which induced us to say in the beginning of the enterprise, in language as sublime as original, "I told you so."

We feed a pig nine months for 100 or 150 pounds of meat, or eighteen montus for 200 or 250, when we might get the same weight—and more meat—in half the time, and wonder "why somebody don't

go ahead and introduce that thar 'proved stock,' or else we deny the reports of its superior excellence, and chuckle over our exalted wisdom as we remark, 'the breed o' hogs iz all in the korn-house; giv' us enny hog an' plenty o' korn, an' we'll down the scales for you, and all them big pork we read ov' growed on paper, they did,'—when a combination of a few farmers would buy the stock and test it for less money apiece than "drinks all round." We make three pounds of butter per cow per week, and put no faith in stories of ten and twelve pounders, although by combination a dollar a cow would bring twenty in the milk pail.

All this has been and is; but when the guardian angels of rural Maryland shall spread their white wings over the triumph of their protected, and gather the champions of her cause around them, chief among these shall stand as the agent of her redemption the jeweled form of Combination; and to secure the help of the super-human "somebody," we have been waiting for, we must bend our own energies to the task, and Hercules will be with us; to feel that the two-hand blade of a *Cour de Leon* is in the van, we must wield the weapons we have at command.

LESSONS OF THE CROP REPORT.

With considerable labor, in compiling and averaging the reports of correspondents, from 903 counties of the principal wheat growing States of the Union, the June Report of the Agricultural Department shows several lessons, and that the crop for this year will be about or fully 220,000,000 bushels, against 130,000,000 bushels for 1871—at an average of $11\frac{1}{2}$ bushels per acre.

Lesson First.—This average of only $11\frac{1}{2}$ bushels per acre is absolutely discreditable, almost shameful, to the farmers, when we see that 23 of the States raised an average above that figure in 1870; and ten States made an average of over 15 bushels per acre; and in 1869 ten States made an average of over 17 bushels per acre. Now, when that amount can be accomplished in so many States, it is folly to allow the average to be so low.

Lesson Second.—It uniformly appears from this fund of correspondence that wheat put in with the drill suffered much less from frost and winter-killing and from drouth, than that sowed broadcast; this is the testimony from South, West and North, and worth heeding.

Lesson Third.—The general testimony proves, also, that the wheat on deep plowed, well drained lands was injured less by frost and drouth than on the contrary.

Lesson Fourth.—The experience of careful operators shows that winter grains and meadows, when well mulched or top-dressed with fine manure, forest leaves, saw-dust or litter, suffer less from winter frost and summer drouth, than when not so treated.

These things are worth noticing and practicing. Deep plowing, drill-sowing, under-draining, and top-dressing for wheat and for meadows.

For the Maryland Farmer.

DEEP PLOUGHING—MANURE—CLOVER.

In your complimentary notice of your correspondent "Marylander," in your July number, you profess not to agree with him, inasmuch as you hold that "a judicious use of the scissors and able corps of correspondents have much more to do with establishing a journal in the confidence of the reading public than have editorials, &c.," your correspondent did not mean to be thought to undervalue their agencies. His remarks were directed to the value of experience and observation in keeping the scissors to discriminate between good and bad in their gatherings.

Deep Ploughing.

I am as radical as Mr. Greeley in the matter of deep ploughing. No one can doubt, perhaps, that other things being equal, a depth of twelve inches well fertilized is in a better state for a course of cultivation than a depth of six inches, equally enriched. But it does not follow that it is always wise to plough twelve inches deep.

Mr. George E. Waring, of "Ogden Farm," gives in the *American Agriculturist* for July, a notable case of damage and serious loss by too deep ploughing, and it is by no means without precedent.—Deep ploughing was a long time ago brought into disrepute in Maryland by its too indiscriminate use in soils of all sorts. There is a tradition of quite a fever for deep ploughing among the leading farmers of the State more than fifty years ago, under the influence of a very forcible essay published in pamphlet form by Thomas Moore, of Montgomery county. It resulted in many cases in such experience as that of Mr. Waring, who says: "It is undoubtedly safest to advise all enterprising young farmers to leave well-enough alone, until they have found by actual experience, on their own land, that deeper ploughing will not be injurious. One ploughing ten inches deep has cost me already four year's use of eight acres of land, which, had I left its vegetable soil at the top, and its 'pizen' clay at the bottom, would have given me a fair return for the seed and manure and labor. I have thus far squandered it. Four summers' heat and four winters' frosts, with manure enough to have made the adjoining land highly fertile, have had an appreciable effect in overcoming the detestable impoverishment of the very unfertile subsoil we brought to the surface. I am now struggling to get it down to grass and clover, with some prospect of a fair catch. If we could once get it in good clover, the battle would be won, but how or when that can be done yet remains to be seen. As the case now stands I had better have given \$100 per acre, and kept the ploughing within six inches of the surface."

But Mr. Waring's case, and those like it, may be said to be exceptional. There was manifestly "pizen" in his subsoil, and this is not we think generally the case, if it is often so; but it is always barren in organic elements, and should never therefore mix in large proportion with the surface soil. The deepening should be gradual.

There is a practical question of very great importance closely connected with the question of deep ploughing—whether it is desirable under any ordinary circumstances of cultivation to turn up to the surface any earth lying deeper than six inches. Where the case is such as to justify very extravagant manuring, as in market gardening, the upturning may be carried to any depth. It is a fact, however, plain to all observers, that manures act most effectively at and near the surface. An economical use of them therefore demands that they be applied where the roots of our common plants mostly range, and that is within four or five inches of the surface. Soil made rich to this depth will, it is well known, bear large and profitable crops of any of our farm production. Would it be wise in any common case to turn down this to the bottom of the furrow, and put upon it four or six inches of barren earth?—Certainly never until we can command enough manure to make the new earth as fertile as that we have buried; probably never, as the breaking up of the subsoil, without fertilizing or bringing to the surface, may answer always all the ends of cultivation.

As to the manner of deepening the soil, I think it is best and most economically done during the summer cultivation of crops, by deep working implements that will tear up the hard pan, and leave it where it is.

Manure and Clover.

Here is another practical question that has an important bearing on our Southern agriculture especially: In the manuring of our land to what degree should our first operations extend? Shall we make each acre rich as we go, confining our means of improvement to just those acres that we can at once make good, or shall we manure moderately and spread over more surface? We admit it is good economy to cultivate only well manured ground, and that we should aim at the highest culture sooner or later. But with us who have large fields and poor pockets, yet would not still despair of improvement, what must we do?

We should keep close to this thought, that the first great want is more and more and always increasing manure; and of all manures that are most easily obtained and most available, and therefore, cheapest, is *clover*. Just to the extent that we would make the substantial, permanent, and ever increasing improvement of our land the leading

thought of our practice, must we adapt our cultivation to the increase of the clover crop.

How is this to be done? Must we be satisfied with the common practice of throwing the costly seed away over broad surfaces of entirely unmanured land, scarcely one-fourth of which is capable of bringing a profitable crop? This folly should surely be abandoned. On the other hand, can we be satisfied with the few acres that we can manure well for corn and other crops; this may be very tedious work.

The fact should be known that the quantity of manure needed for one acre of corn, or tobacco, or potatoes, would dress well and bring a good crop on four acres of clover, if we use the ordinary dressing of plaster at the same time. But it should be used as a *top-dressing* at the time of seeding, if practicable, or whenever it can be done. Every available shovel-full of home manure, with straw, and stalks and litter of every kind should be religiously devoted to this purpose. Applied when the seed is sown it gives certain covering and protection, and impetus in early spring, and acts as mulch in mid-summer, and so insures a crop. If it be so necessary a crop for our purposes, should we not make the sacrifice required of taking these manures for the time from other crops, to be given back four fold in the clover sod two years after.

This top-dressing, be it remembered, is a sure thing, but it is not so with the commercial fertilizers. They are good for crops, and let us get all we can afford for this purpose; for the more crop the more material we have for top-dressing the clover, and so the more crop again. It is only the beginning of such a system that will give trouble. Begun and resolutely carried out it will bring abundant reward.

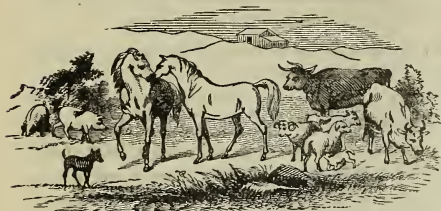
The point of special advantage is the small quantity of manure required for a given surface. It will be remembered that the crop once established feeds largely from the atmosphere, but it needs to be started. On poor land it must have some help in its early growth, but a very moderate dressing is enough.

MARYLANDER.

AGRICULTURAL FAIR AND EXHIBITION.—The *Kent News* announces that the Annual Fair and Exhibition of the Kent County Agricultural Society, No. 1, will take place on Tuesday and Wednesday, October 1st and 2d. The "Hawkins' Park Trotting Association" announce that a horse fair will be held at their park, adjoining the show grounds, on the same days. The names of the gentlemen composing the committees of arrangements for these exhibitions is a sufficient guarantee of their success, and we hope to see such a general interest awakened as that many counties will be represented on the occasion, and compete for the premiums offered.

Corn sells for 20 cents a bushel in Johnson Co., Kansas.

Live Stock Register.



SHORT HORNS PREFERABLE TO JERSEYS.

A correspondent of the Boston *Cultivator* having written strongly in favor of the Jerseys. Mr. Jonathan Talcott, of Rome, makes the following reply:

Having had some experience with the Jersey cow compared with the Short Horn, to satisfy myself which was better for the farmer to keep, I have given the Short Horn the decided preference for the following reasons, viz:

1. That the Jersey cow does not uniformly (on the same keeping) give richer milk than some families of Short Horns, as tested in my dairy; have had full blood Short Horn cows run in the same pasture with pure Jerseys at the same time, that would form the same amount of milk, raise a thicker cream, and full as highly colored as the Jersey, while they would give nearly double the quantity of milk; that makes a great difference in favor of the Short Horn, in my estimation.

2. In the districts where milk is carried to the cheese factories, the cow that will give thirty or forty pounds of milk a day is of much more value to the dairy farmers than one that does not give more than half that amount, as ten pounds is an average of milk taken for one pound of cheese in all good factories that are well managed by a good cheese maker.

Francis Rotch told the writer that the first Short Horn cow he had on his farm made $17\frac{1}{2}$ pounds of butter in a week, on grass alone, on trial; that there are good milkers among the Short Horns, and that these properties can be found as well in that race of cattle as any other. I will mention a single family: In purchasing a heifer of Mr. Rotch, he told me she was from his best family of cows. In breeding her to the imported bull Marquis of Carabas (11789) the production was a heifer, dropped in 1856. She is now in my herd and a regular breeder. Her usual yield of milk in good feed has been an average of 40 pounds per day. She was bred to Echo of Oxford, (1500.) The product is a heifer whose daily yield has averaged 45 pounds, frequently giving 50 pounds in the flush of feed.—She was then bred to Lord Oxford, (3091.) The product was a heifer that has been fully equal as a dairy cow to her half sister. She was then bred to Ellsworth, (4780.) The produce also a heifer that has given more milk than either of the others, thus showing conclusively to me that good milking qualities can be improved and perpetuated in Short Horns, and after trial of a score of years, am fully of the opinion that the Short Horns can be bred to produce as much and as good milk as any race of cattle, and when dry, will fatten as easy as any other breed, and furnish a large amount of beef of fine quality; the cows mentioned in this family

have all had finely formed bags, with large, handsome teats, and with one exception, are now in my herd, although now they are old cows, they are kept for their superior excellence for the dairy.

Let me state some of the defects of the Jerseys. They are very likely to have small teats, and to milk very slowly, frequently taking twice as long to milk them, by a good milker, as it does a cow with good teats, that gives double the quantity they do; then their milk is not uniformly of the richest quality, as I have been frequently told by their owners that there is a vast difference in quality as well as quantity, and that in selecting, there is as much need of care in selecting the Jerseys as in any other breed. They are very liable to be vicious in both bull and cow, bulls particularly so. Francis Rotch told the writer, a few years since, that their wild disposition was a great drawback to them as farm stock; also, that if a man wanted a cow for family use, unless his family was small, the Jersey cow would not give milk enough, and few persons knew then, or do now know better than Mr. Rotch about the Jerseys; but all are not as honest to tell the truth about them as he was to me, as I was in pursuit of some females of the breed, when he gave me the information.

The Jersey is a very tender animal, and must have the richest feed to keep her in fair condition as a dairy cow, and that is one great secret of the richness of her milk. I have known them tried as family cows in several instances, and disposed of because they did not fill the bill.

The writer served as one of the judges on Jerseys last fall at our county fair, and inquiring about the milking properties of a Jersey from a noted herd, the owners said in reply to the question, how much milk does she give to a milking? "About as much as a man can drink at once." All the Jerseys shown had very small, short teats, and that is one great defect in the Jersey cow for the dairy. In the trial I have given the Jersey cow with the Short Horn, in my own dairy, and from all the information I have been able to get from Jersey breeders, I have come fully to the conclusion that the Short Horn must be the better cow for the dairy, either as a grade or full blood, and when she is disposed of for beef, I have sold some at \$100 and upward, which is no mean sum for a cow when her milking days are over, and she is sent to the butcher's shop, the destiny of all races of neat cattle.

STABLE ECONOMY—*Turf, Field and Farm* makes some good suggestions to horse owners as to stables. They should be tight, dry and well ventilated. Dark stables and bad ventilation bring on blindness, glanders, farcy and other diseases.—Ground floors are preferable for horses to stand upon, particularly in hot weather, but they also possess disadvantages. When horses stand on board floors their feet should be moistened frequently to prevent fevered legs and contracted feet. "Working horses which are bad feeders should be often soiled, or mashed out with scalded bran to prevent constipation, restore the appetite and preserve condition for future service." Food should be apportioned out according to size and the labor required. Some proprietors allow from $2\frac{1}{2}$ to 3 per cent. of the horse's live weight of good food per day. It is good economy to feed work horses well—cheaper to buy grain than to buy horses. Colts should also be fed well; if they become stunted they seldom develop into first-class horses.

USEFUL RECIPES.

HINTS ON FOOD.—1. All horses must not be fed in the same proportions, without due regard to their ages, their constitutions, and their work. Because the impropriety of such a practice is self-evident. Yet it is constantly done, and is the basis of disease of every kind.

2. Never use bad hay on account of its cheapness. Because there is not proper nourishment in it.

3. Damaged corn is exceedingly injurious. Because it brings on inflammation of the bowels and skin diseases.

4. Chaff is better for old horses than hay. Because they can chew and digest it better.

5. Mix chaff with corn or oats, and do not give them alone. Because it makes the horse chew his food more and digest it better.

6. Hay or grass alone will not support a horse under hard work. Because there is not sufficient nutritive body in either.

7. When a horse is worked hard his food should chiefly be oats and corn; if not worked hard, his food should chiefly be hay. Because oats and corn supply more nourishment and flesh-making material than any other kind of food. Hay not so much.

8. For a saddle or coach-horse, half a peck of sound oats and eighteen pounds of good hay are sufficient. If the hay is not good, add a quarter of a peck more oats. A horse that works harder may have rather more of each; one that works little should have less.

9. Rack feeding is wasteful. The better plan is to feed with chopped hay, from a manger. Because the food is not then thrown about, and is more easily chewed and digested.

10. Sprinkle the hay with water that has salt dissolved in it. Because it is pleasing to the animal's taste, and more easily digested. [A teaspoonful of salt in a bucket of water is sufficient.]

11. Oats and corn should be bruised for an old horse but not for a young one. Because the former, through age and defective teeth, cannot chew them properly; the young horse can do so, and they are thus properly mixed with the saliva, and turned into wholesome nutriment.

12. Grass must always be cut for hay before the seed drops. Because the juices that ripen the seed are the most valuable part of the hay. If they are sucked out by its ripening and dropping, the grass will not turn into hay; but will only wither and grow yellow.

13. Vetches and cut grass should always be given in the spring to horses that cannot be turned out into the fields. Because they are very cooling and refreshing, and almost medicinal in their effects; but they must be supplied in moderation, as they are liable to ferment in the stomach if given largely.

14. Water your horse from a pond or stream, rather than from a spring or well. Because the latter is generally hard and cold, while the former is soft, and comparatively warm. The horse prefers soft, muddy water to hard water, though ever so clear.

15. A horse should have at least a pail of water, morning and evening; or (still better) four half-pailfuls, at four several times in the day. Because this assuages his thirst without bloating him. But he should not be made to work directly after he has had a full draught of water; for digestion and exertion can never go on together.

16. Do not allow your horse to have warm water to drink. Because, if he has to drink cold water, after getting accustomed to warm, it will give him the colic.

17. When your horse refuses his food, after drinking, go no further that day. Because the poor creature is thoroughly beaten.

The Florist.

FLORICULTURE FOR AUGUST.

PREPARED BY JOHN FEAST, Florist, Baltimore.

This month keep everything in order—let nothing suffer for want of water—for if this is neglected it requires some time for them to recover. Out-door plants need much attention; bedding-out plants have suffered greatly for want of moisture, particularly Annuals; therefore, in addition to watering, syringe every evening, when not favored with rains.

Carnations, Roses and many other plants may be layered this month, if a new stock is wanted; they will have plenty of time before fall to root. Then take up and put in small sized pots and place them in a shady frame until they recover; keep them close for a few days, and then give sufficient air and more water.

Dahlias and others will need tying up as they grow, to protect them from the wind or being broken down, which retards blooming; give them plenty of liquid water, to ensure fine flowers.

Green-house Plants of all kinds, which require re-potting, should be done this month; many will need cutting down, so as to make fine heads—do not hesitate to use the knife. The beauty of a green-house is to make every plant show for itself, and not crowd together so as to destroy one another.

Tender Plants that are in doors for the summer will be flowering, as *Gloxineas, Gesneras, Tydeas, Eucadonias, Plectonias*, and all those fine plants that adorn the house in summer; they will require a shady place, with sufficient moisture.

Oranges and Lemons bud at this time if stocks on hand.

In-arching such plants as *Camelias, Azaleas, Magnolias*, or any other hardy plants may be done at this time. Keep them in a shady place and frequently syringe.

Pelargoniums done flowering, cut down, and if a new stock is wanted, put in cuttings in a proper place.

Propagation of soft wooded plants, as *Stevias, Al-lyurn, Heliotrope, Eupatoriums* and such for winter flowering, may be propagated at this time.

Seeds of *Chinese Primroses, Calceolarias, Mimulus, Cineraria* for spring flowering, may be sown this month; they will be good strong plants if sown early. Put the seeds in shallow pans and cover very light, and carefully water; keep in a shady place.

Creepers of different kinds may be cut in and some layered down to increase the stock; cut out all the superfluous wood, and leave none but fine, strong shoots. *Passion Flowers* require the same treatment. Nothing more is required than to keep everything in order; to see that plants do not suffer want of attention. Keep the borders clean and stir up the soil; a top-dressing around the roots would be of service this hot weather, giving moisture to the ground. Evergreens should be treated the same way, as many have failed for want of more moisture.

Pomological.

Prepared for the Maryland Farmer.

POTOMAC FRUIT GROWERS—JULY.

The July Meeting--Fruits--Bees--Locusts--Curculio--Ants--President's Essay--Birds.

Though the weather was oppressive and for many days has been, the July meeting of the Fruit growers was well attended, and a pleasant, instructive one; the society is steadily receiving accessions to its membership, as the following:

Mr. Isaac Besley, of Vienna, Va., proposed by John T. Bramhall; Col. H. C. Williams, of the same place, proposed by John Saul, and Dr. J. Brainard, examiner in Patent Office, by D. S. Curtiss.

DAWSON PLUMS.

Question—In what length of time will a damson plum tree be expected to come into bearing—a member seeking fruit seven years, and found none—his tree three years old when purchased.

John Saul and others stated that they should come regularly into bearing, under ordinary circumstances, in three years.

CURCULIO—HOW KILLED.

It was stated that the plum crop is uncertain on account of curculio; how can we get rid of it? is the great question.

Col. Curtiss had seen chickens eat the curculio when shaken from the trees; and also small pigs would devour them.

Mr. Pleasants had set out many plum and damson trees, letting poultry run in the orchard. He and Mr. Saul had no faith in chickens eating the curculio. But they had not tried or practiced faithfully shaking them off, daily, where pigs and chickens could get them. Others, who had done this found it useful; Major J. H. King, spoke of two sites where he had seen the damson growing, and he, with others, expressed the opinion that they would always do well if grown in groves, and leaving most of the care to nature.

Colonel Curtiss, asked if it was known when the depredations of the curculio began, as he never knew them in his boyhood.

Professor J. Brainard remembered that it was troublesome as early as the year 1825 in Ohio.

BEES AND FRUIT.

Some discussion was had, as to whether bees are injurious to fruit; some members thinking they could bite through skin to suck the juice; but the better and more general opinion was, that they do not puncture the fruit, but only feed where others bruise it; that they, in fact, are beneficial in distributing the pollen and thus aid fruitfulness; and it was generally admitted that bees are not injuri-

ous to fruit culture; but are very appropriate to be raised with it. *Ants*, also, were said to be useful, by destroying the little green fly and other insects, but eating the fruit only where bruised by other causes. *S.*, *Birds*, do much more good than harm.

EXHIBITIONS OF FRUIT.

Different members deposited their delicious and beautiful Pomological offerings on the tables of the society, for examination and discussion:

John Saul, of Washington, with his variety embracing, *Raspberry*, the "Prosser," "Red Canada," and "Yellow Canada," new and hardy varieties, capable of standing the cold of last year, the severest winter for twenty years; also the "Golden Thornless," "Philadelphia," "Elisdale," "Ohio Everbearing," and "Mammoth Cluster," the latter being the largest and best blackcap. He had also the "Downing *Mulberry*," and the English "Black Naples *Currant*."

Mr. S. H. Snowden, of Collingwood, Fairfax county, Va., exhibited *Apples*, the "Red Astracan," "Prince's Early Harvest," the "Strawberry," and "Summer Rose," and one not named.

Dr. R. P. Darby had a magnificent basket of the English "*Antwerp*;" for color, firmness, and size standing A No. 1.

B. Bryan presented a fine basket of raspberries, name not known. He is a very successful grower of berries, and finds mulching, in fall and spring, with fine manure, saw dust, or forest leaves to be highly essential. Chalkley Gillingham, the President, brought a large basket of various sorts. His varieties of *Apples*, were the "Edward's Early," "Astracan Red," "Summer Rose," "Prince's Early Harvest," "Early Strawberry," "Benoni," and "Pennsylvania Strawberry *Pears*," "Downing's Sugar," and "Doyenne d'Ete."

STING OF LOCUSTS.

Dr. J. Brainard, submitted the following: "In the spring of 1869 I planted 3 500 budded, selected peach trees in Prince George's county, Md.; they were badly stung by locusts, and many of them, perhaps 500, died by fall. All were injured, and I have to ask if they will ever recover from the shock."

In response to this, the generally expressed opinion was, if the trees were badly injured and stunted, they be entirely grubbed out, burnt up, and replaced with new trees; but some had found favorable results from freely cutting away and pruning off injured parts.

PRESIDENT'S ESSAY.

Chalkley Gillingham, agreeably to appointment, read an interesting paper on Fruit Growing. He reviewed the course of setting out orchards, giving directions in relation to site, soil, &c. It was listened to with marked interest, and was received for permanent record.

After testing and discussing the samples of fruits, the society adjourned, till the first Tuesday in August, when the public and strangers are cordially invited.

D. S. C.

APPLE ORCHARD--DECAY IN GRAPES.

WASHINGTON, July 13th, 1872.

In my last report of the Potomac Fruit Growers July meeting the following papers, read before it, were not then accessible, are now submitted as highly interesting and important.

THE APPLE ORCHARD.

Chalkley Gillingham, President of the Society, read the following :

THE ORCHARD AND ITS MANAGEMENT,

from the selection of a site, forward. These are especially valuable, as he treats with all details minutely :

In my last I gave the amateur's list of apples, in which I said the Early Strawberry of Pennsylvania was first on the list. To-day I confirm this, by bringing almost within my pocket a tree and its load of fruit, the blossoms for which were formed the second year from the graft and the third year from the seed; the apples are fair and handsome, and nearly all ripe.

I will now say something about the location and preparation for planting the orchard. If the site for your permanent buildings is not yet located, let it be done with especial reference to the orchard site, which should always be, *if possible*, on the northwest from the buildings and not far from them, and sloping towards the north or northwest. A high dry soil is indispensable for almost all kinds of apples; none will flourish in naturally wet soils. After fixing the site for the orchard let the ground be ploughed up deep, and if subsoiled all the better; then mark out both ways with a plough—30 to 33 feet apart—and plant the trees at every crossing, which will make them row six different ways if carefully planted, and with this careful ploughing and preparation of the soil, and the whole field planted and cultivated in corn or some other hoed crop, which is indispensable, for some years. Then the holes for the trees need only be large enough to contain the roots, for virtually, the holes, or in other words, the loose ground will be as large as the field and as deep as the plough can make them. With the above care in the selection of kinds adapted to the location and climate

THE APPLE CROP IN VIRGINIA

and surrounding country can be a perpetual one, from June to June year after year, and will be found to be as A. J. Downing says: "The world renowned fruit of temperate climates." And that temperate climate our section of country enjoys in its fullest extent. The size of trees to be planted in the general orchard is another matter for consideration, and while in theory many advise to plant small trees, yet, practically, it is better, in the main, to have them of good size, so that when intrusions are made into the orchard (and few throughout the country are exempt from these) the trees may not be broken down and spoiled, and most trees must have a certain age before they will bear fruit, and they are

better from having been grown upon similar soil—to that upon which the future orchard is to be located. For instance, trees grown upon very rich soil, either naturally and by artificial means made so, so as to force a rapid growth and then transferred to the orchard, with the quality of soil generally found in orchards throughout the country, the trees do not find the same amount of nourishment they had been accustomed to, and a stunted growth is the necessary consequence. But there are some sections of our country where this caution will not be necessary, in the rich valleys of the central portion of Virginia and western Maryland and the western part of North Carolina. It must be borne in mind that these views and ideas are intended for the Southern States, but at the same time most of them will be equally applicable to the north. In my next essay the subject for consideration will be the insects that are injurious both to the trees and fruits.

DECAY OF GRAPES.

Dr. J. Brainard submitted the following interesting essay, on a very important subject; which, no doubt, all fruit growers will be interested by reading and pondering :

THE APPARENT DECAY OF GRAPES.

Gentlemen: Herewith please find the results of the microscopic examination of grape leaves and fruit, submitted for that purpose on yesterday at the regular meeting of the association.

The leaves were of the ordinary size of full grown, but were covered with irregular patches of yellowish brown, approaching nearly the color of the dead leaves of autumn.

I submitted a portion of the affected leaf to a magnifying power of twenty linear diameters, (400 area,) and found the surface covered with numerous round black spots of about one five-hundredth of an inch in diameter.

The parenchyma of the leaf appeared dry and hard, extending to the veinlets, and sometimes even to the veins, when the spots happened to be near them.

On subjecting the spots to a high magnifying power, I found in the centre a perforation through the epidermis of the leaf, as viewed from the upper surface.

Upon removing the *arachnoidal* covering from the under surface of the leaf, I could not discover that the puncture had penetrated the cuticle upon that side.

Upon submitting very thin cross sections of the leaf, to the action of water, between plates of glass, I found that the cellular tissue assumes its natural form, exhibiting the cell formation as perfectly as in the living tissue, except it was destitute of the color characteristic of chlorophyl.

I am inclined to the opinion that the disease, if such it may be called, is due to the work of insect life, and not to vegetable parasites, as has been generally supposed. But the truth or falsity of these hypotheses cannot be fully determined without further careful and patient observation.

It is well known that the bite or sting of most of the insect tribes is poisonous to the animal kingdom, and the tender and living tissue of the plant is no exception to the rule. Mohl, in his admirable work on the "Vegetable Cell," recognizes this fact. Indeed all vegetable physiologists admit that poisons, whether drawn from the mineral, vegetable or ani-

mal kingdoms, exert their destructive power upon the living vegetable tissues.

The poisonous influence in this case may have been communicated to but a single cell, and propagated by absorption from cell to cell, until thousands became involved, for it will be borne in mind that the cell membrane is an exceedingly delicate tissue, and does not possess the power to resist, to much extent, the introduction of poisonous substances into its circulation.

The fruit (grape) submitted for examination showed upon each side a puncture, evidently made by some insect. Upon carefully removing a portion of the pulp, and examining it with a glass of one inch focus, I found a dark, knotty, irregular mass, involving at least one-fourth of the berry upon each side, and exactly opposite the seeds, of which there were two.

The seeds were of the usual size, the nilum adherent to the placenta, and presenting a healthy appearance, except that immediately beneath the puncture in the skin of the fruit the solid envelope of the germ was also perforated, showing a dark color; the intermediate pulp was also dark, approaching nearly to black, appearing as though the cells had been ruptured and the liquid contents poured out into the cellular tissue and become coagulated.

A section of the seed showed that it contained no fluid or solid matter, the inner walls being dark, and the empty cavity presenting the appearance like that of a decayed tooth. I sought carefully for the egg of an insect which I supposed had been deposited there, (as in the pea, in which the egg is deposited while the plant is in blossom,) and it may have been the case in this instance.

Both seeds presented an external healthy appearance, except at the point of perforation, but it can hardly be supposed that, in the event of an egg having been deposited, the pupa could have come to a state of maturity, and escaped during the immature state of the fruit.

A query arose in my mind whether this puncture of the fruit and seed could have been made by some insect for the purpose of obtaining the nutritious fluid designed for the maturity of the seed.

The important inquiry is to find out the *cause*, and then we may hope to be able to apply a remedy.

AN IMPORTANT RESEARCH.

This able diagnosis of an important case opens questions of great import, and interesting discussions may be expected from it. It is hoped that members of the association and its friends will be more observant than ever, and bring forward all such matters and questions as fast as they come.

It is rare to find an association possessing so much professional and practical skill and experience. And the fact of its holding together so well and long, shows that there is plenty of work to do, and that the laborers are equal to the harvest.

NATIONAL PROGRESS.—The Great American Institute announces its Forty-First Annual Exhibition, to be opened in the city of New York on the 4th of September next. Applications for space to exhibit the best Agricultural Productions, Mechanical Inventions, Artistic Devices, and valuable Articles of American Manufacture, are now in order. It is intended to make this the most extensive, useful and meritorious exhibition ever held in America.

PEACH CROP OF NEW JERSEY.

The New Jersey peach crop, according to the *Elizabeth Journal* of July 20th, will be a very heavy one, notwithstanding we have had unfavorable reports from that section, Delaware and Maryland. It says.

"There is scarcely a peach tree in Union county that has not a 'show' of peaches on it, and by nothing less than a hurricane or a hail storm can they be injured. Not only in these parts, but in South Jersey and Delaware, where the greatest supply comes from, the crop will be large. We are assured, also, that the fruit will be of a finer quality than in years gone by. A large crop is not desirable when so; the fruit is smaller, and of course less fragrant. It is generally admitted that the Delaware crop will be less than it was last year, but that the peaches will be larger and more desirable we have no doubt. In South Jersey the prospect is most flattering. Through Burlington, Atlantic, Monmouth and other counties, it is unusually large, and great preparations are being made for forwarding it to market.

"The few peaches which have been sent forward to this time are from Norfolk and Delaware; none of the Jersey fruit has yet ripened. There will be a daily train over the Pennsylvania Central road run to New York expressly to carry peaches. Last year the train numbered frequently over sixty cars; we expect to see it longer this year. The beauty of the peach crop is that it continues so long in our market, lasting over three months. After the southern crop is exhausted, Hunterdon and the neighboring counties send forward their supply.

"We learn that the crop west of us is also immense. The trees are filled with better looking peaches, and more of them, than for any year in a long time. The Central road will, as usual, run a peach train over the South Branch to accommodate growers, many of whom of late years have been sending their fruit to Boston. The Morris county crop is the latest in New Jersey, though New York State sends us some pretty fair peaches later.

"The 'Morris White's,' which used to be so famous, have given place in a great measure to other and more desirable varieties. Around Green Village, New Vernon, Baskingridge, Morristown, &c., the crop will be large. Mr. Sam'l Roberts, of Green Village, has an orchard which will produce probably 1,800 baskets, over twice as much as it did last year. Several parties near New Vernon expect their crop this year alone will pay the whole expenses of the orchard. The baskets cost 20 cents each. Mr. Roberts has manufactured already nearly 5,000 of them. They are made of white wood, which is steamed and cut, not sawed, by water power.

"An orchard is considered good for bearing at four years. The trees bear a few peaches the third year after being set out, and the fourth year a good crop is expected. The farmers of Morris county are now 'cultivating' their fruit. This is done by plowing between the rows, which is as necessary as the plowing of corn. There are about six kinds of peaches raised in this county, and they are all of a late variety."

Specimens.—Specimen copies of the *Maryland Farmer* sent FREE to any address.

Grape Culture.

ABOUT COLD GRAPERIES.

The culture of the foreign grape under glass, although requiring much skill and experience if the highest success be desired, is yet comparatively easy when in the hands of intelligent men who have not had the best of horticultural education. If one wish for the highest success, and will be satisfied with grapes which always take the first premium, he will most likely engage the best of skill to design the house, make the borders, plant the vines, and take care of its subsequent history. But there are many persons in moderate circumstances who cannot afford heavy outlays for first-class advice, who may yet have pretty fair grapes under their own management, or by the help of a handy man.

For such we offer a few words, and in the first place, as to location. Aspect is of very little consequence, but east or west we should prefer. The chief thing is to have a thoroughly dry soil. We mean by this, one in which the water will pass rapidly away after every heavy rain. In first-class gardens this is accomplished by under-draining, but a cheaper way for poor folks is to select a piece of ground naturally rolling, or if this cannot be, then to elevate the bed a little above the surface of the ground; then there will be no necessity to go below it. This is often indeed found to be the best plan, even for the best gardeners, as even with the best of care in underdraining, it is found that the soil is cold and damp, and then the grape does not do well. In some of the best grape-growing gardens of England, after much expense has been gone to in underdraining, it has still been found of advantage to make a bottom of concrete, about 18 inches from the surface, so as to prevent the roots from going to a greater depth than this.

Having selected the location, soil for the border is the next thing. It used to be a fashion to look after carcasses or other very rich matters to bury in the grape borders, and even yet one who starts a vinery for the first time is very apt to inquire if bones or bone dust are not good articles to put in the grape border. This has met with much ridicule from many of the modern practitioners. In truth the grape likes rich soil and good feeding, and provided the roots are kept healthy, the grape border may be highly manured. We say provided the roots can be kept healthy, for as soon as a vine becomes sickly, the richer the soil the worse the plant will get. If, for instance, by too much stagnant water in the soil young fibres rot, the injury will be greater in rich soil than in a poorer one. Our choice for a grape border would be the top

soil, about three or four inches thick, of any old grassy piece of ground, which should have about one-fifth part of stable manure mixed with it, and and thus suffered to remain a year in a heap to rot before using.

In regard to the house itself, piers may be built up at the four corners, and at certain distances between to support a stout and heavy wall plate; or substantial posts, well seasoned with tar, may be planted; or, still more desirable, if it can be afforded, a stout wall of stone or brick as a foundation for the plate. Some go to the expense of making arches in the wall for the roots to go in under the house, but this is not necessary. The roots do well enough when wholly in the border outside. The plates thus laid, the house can be built on them; that is, the house is not built with movable sashes, but sash bars are built on the wall plates to the roof. The house is, in fact, but one sash. This is what is now known as the fixed roof principle, as opposed to movable sashes. The strength of these sash bars will depend in a great measure on the pitch. The steeper this is the lighter the bars may be. An angle of 45° is the steepest pitch employed, but it makes a very strong and substantial house. There are many advantages in favor of flat roofs, but in the long run a tolerably steep pitch will be found the best. About every five or six feet one of the sash bars should be of rafter size, three by four at least, so as to give strength to the house, and also in order to have places into which to fasten the wires on which the vines are to be trained. The vines are subsequently to be planted beneath each of these rafters.

In such a house as we have in our mind, it would be a span-roofed house; that is, like a Δ inverted, with the two ends resting just above the vine borders, which borders are to extend about fifteen or twenty feet from the outside of the house. Some little arrangements will have to be made for ventilation in the highest points of the roof, but none need be made at the sides near the ground.

Of course there are some matters of detail, which would have to be thought out before one could go on with a vinery; but our object is chiefly to suggest that these houses might be much more frequent than they are, and at a much less cost than is usually imagined; and we suppose that the general outlines we have given will enable those who may feel inclined to try them to study out pretty nearly what they would cost in their various localities.—For a few hundred dollars it will be found that these very enjoyable adjuncts to a garden may be had, in the place of as many thousands, as is generally supposed.—*Gardener's Monthly*.

The annual export of British textile fabrics is nearly £86,000,000.

The Poultry House.

BREEDING AND FEEDING TURKIES.

The turkey does not attain its maturity until the third year, and the largest, strongest chicks can only be secured from mature parents. So common is the practice of selling off everything at a year old or less, that it is almost impossible to get stock two and three years old. In purchasing breeders, it is the best economy to buy the heaviest birds, even at fancy prices. A ten months' cock weighing thirty pounds is cheaper at fifty dollars, than a twenty pound bird at five. Young hens weighing sixteen to eighteen pounds are cheaper at twenty dollars, than twelve pound birds at five. Large, well formed birds of perfect plumage will leave their mark upon their progeny. They will not only be more comely to look at, but they will bring much more satisfactory prices, whether we sell them to the butcher or to the breeder. Under the stimulus given to poultry raising by the numerous poultry societies and journals started in all parts of this country and Canada, there is likely to be a lively demand for extra breeding stock of all the finer varieties for some years to come. The breeder who goes in for the very best stock, taking premium birds when he can get them, and selling nothing from his yards but prime birds, will be likely to make the most money.

FEEDING.

The practice of most farmers who raise turkies is not to feed at all after the young birds are six or eight weeks old. They are driven off to the pasture or woods, early in the morning, and get their living where they can find it. Their chief food is grasshoppers and other insects, and they do the pastures and meadows a great service in keeping under these destructive creatures. This may be well enough where insects and must are plenty.—But upon many farms the range of woodland is exceedingly limited, and the growth of the birds will not be satisfactory without feed from the corn crib. They should come to the roost every night with full crops, and if, on examination, this is not found to be the case, they should be regularly fed once a day at least. There is no danger of fattening a young turkey on a good range in the first six months. With first-class stock, full feed will make a difference of four or five pounds in the weight of the birds at Thanksgiving. Turkeys like a variety of food, though they do very well upon corn, which they never refuse while in health.

They are very fond of a mash of boiled potatoes and Indian meal, and thrive admirably upon it.—Whatever the provender, it should be fed regularly, and the birds be kept thriving from the shell to the butcher's block.—*Poultry World.*

The Dairy.

BUTTER MAKING.

A Mr. Todd, (city farmer,) of the New York City Club, is eloquent on the subject of good butter.—He thus descants upon what he "knows about butter making." Hear him:

"Many producers of butter make a great mistake, which deprives them of a large amount of clean cash, by supposing that the products of their dairy will return them just as much profit when the butter is made in such a perfunctory manner, that it resembles a cross between mutton tallow and lard, rather than gilt-edged butter. Thousands of tubs and firkins of butter, strong enough to perambulate the city, are sold at ten to fifteen cents per pound; whereas, by exercising a little care and neatness, and adding the proper quantity of salt, every pound would have brought thirty or thirty-five cents.—The loss has to be sustained by the producers. Thousands of hard-working females who grind out their dimes by irksome drudgery, could save two or three dollars for every hour's service when making butter, by simply spending a few minutes more than they have hitherto done in managing their milk, cream and butter with extra care. It is the scrupulous neatness in washing milk pails and cans, in the management of the cream, in churning and packing butter, that secures an article that will pass for prime, gilt-edged, which always commands a remunerative price, whether it is made in Orange county, or on the prairies of Kansas."

He proceeds, throwing in the rhetorical points, which we have not room for, to say that cleanliness is the first element in gilt-edged butter. The pans, strainers, hands, cows' udders, and cellar or spring house must be clean and pure. Milk readily absorbs all atmospheric and sold impurities. Skim the cream off as soon as it has risen. If it remains till the milk gets sour it is spoiled for the prime article. Churn not less frequently than once in two days, and do not stop churning until the job is over with. Don't touch the butter with the hands. Work out the milk with a ladle, but do not work it more than is necessary for that purpose; after salting liberally with fine table salt, pack in firkins that have been soaked two or three days with pure brine. All this done, the top of the market will be paid for the product.—*The Interior.*

DUCKS IN THE VINEYARD.—It is said in the *Grape Culturist* that a large vineyardist in Illinois keeps not less than one hundred ducks constantly among his vines; he says it is wonderful with that diligence they will dart after all kinds of bugs, thrips, flies and small snails, and he considers them among the best of insect exterminators. Everybody knows that nothing will exterminate insects in a garden so well as a few coops of little chickens.